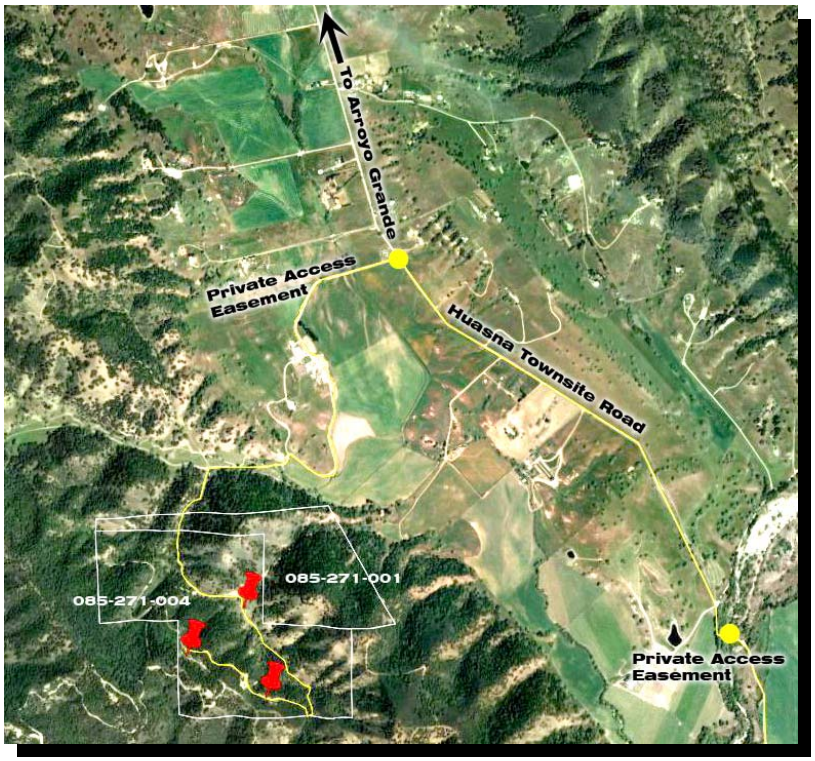
Supplement to the Application - Conditional Use Permit

Huasna Valley Oil Exploration and Production Project



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1.0 PROJECT HISTORY OVERVIEW

On April 29, 2006, Excelaron LLC ("Excelaron") was formed as a California small business with the sole purpose of establishing four (4) production wells on an existing oil well field in hillsides above Huasna Valley (Mankins Ranch). On June 5, 2007 Excelaron submitted a formal Conditional Use Permit application to the County of San Luis Obispo Planning and Building Department to drill, test and produce the four oil wells. A series of County generated questions and subsequent Excelaron responses ensued for approximately eleven (11) months between July 2007 and May 2008. As the project was close to having its environmental determination issued, Excelaron's conducted its first public outreach meeting on May 22, 2008.

The District Four Supervisor, Katcho Achadjian, who was unable to attend the May 22nd meeting, conducted his own town hall meeting on July 31, 2008. To provide information about the proposed project to the community, Excelaron launched a website www.excelaron.net in early September. Based upon the original circulation route from the site, through the City of Arroyo Grande and onto Highway 101, the City of Arroyo Grande held a special City Council meeting to discuss the project on September 15, 2008. To make certain that all community voices were being heard, a second Supervisor-sponsored townhall meeting was held on September 18, 2008.

Motivated by concerns expressed during multiple public meetings, Excelaron revised its project description to exclude travel on Huasna Road and through the City of Arroyo Grande. Instead, Excelaron was able to obtain a private access easement through a ranch to the south of the project site (Porter Ranch) that would provide for access to Alamo Creek Road, Highway 166, and ultimately, to Highway 101. On September 25th, Excelaron submitted a revised project description and updated environmental and technical reports to the County. On November 6th, Excelaron hosted another public outreach meeting to introduce the revised project description.

On January 12, 2009, Excelaron executed the County's Developer's Statement – a contract between the applicant and the County describing all of the mitigation measures and the applicant's acceptance to comply. Execution of the Developer's Statement allowed the County to issue the Initial Study and Mitigated Negative Declaration ("IS/MND") on February 5, 2009. On February 19th, a Request for Review of ED07-311 was submitted to the County by the Huasna Valley Association (HVA).

Although the County had issued the IS/MND, it was clear to Excelaron that the most prudent strategy, in light of the record, was to agree to process an Environmental Impact Report ("EIR"). On March 3, 2009, Excelaron notified staff of its decision regarding the EIR. Excelaron met with HVA representatives to discuss the decision to prepare an EIR and what issues and/or concerns should be incorporated into the document. Although the decision to prepare the EIR had been made, noticing for the Planning Commission had already been processed. In an attempt to keep the project moving forward, the original project was withdrawn on March 25, 2009.

Based upon comments from the HVA, Excelaron has revised the project description to include a response to comments in the Request for Review and to include a reasonably foreseeable field development scenario. Since March, the project consultant team members have revised their individual analyses to reflect the aforementioned information.

The revised project description includes a comprehensive discussion regarding the proposed project phases: site preparation, exploration and testing; construction of permanent facilities and long-term production; and finally, should the first four (4) wells prove to be economically viable, field development. The California Environmental Quality Act ("CEQA") assessment section includes a review of the requisite CEQA issues, provides a project setting section, describes potential impacts and offers measures to lessen or eliminate any potentially significant impacts as proposed by Excelaron.

Many of these mitigation measures were excerpted from the previously executed Developer's Statement and brought forward into the new project description. New potential impacts and related mitigation measures were identified based upon new information (e.g., spring floristic survey, protocol California red-legged frog survey, expanded air impact analysis, etc.).

2.0 PROJECT DESCRIPTION

2.1 History of Oil Production in the Huasna Valley

The Huasna Valley has been the site of oil exploration activities dating back to the late 1800's. As oil exploration moved beyond the newly discovered Santa Maria Valley field, small crews hand drilled wildcat wells throughout the valley. The location of these wildcat wells was dependent upon an interpretation of the surrounding topography and surface geology. Most explorers were searching for shallow, free-flowing oil that could be easily recovered without the use of enhanced recovery methods.

Over the course of the twentieth century, the Huasna Valley experienced oil exploration activities in the 1930's, 50's, 60's, 70's, and 80's. The exploration took place in the eastern and western hills bordering the Huasna Valley, as well as the valley floor. The exploration extended as far north as the Tar Springs Ranch and south into the Porter Ranch. According to the California Department of Oil, Gas and Geothermal Resources ("CDOGGR"), approximately fifty-two (52) wells were drilled throughout the Huasna area.

The proposed project is focused on the Meridian Anticline, which flanks the west side of the Huasna Valley. The Meridian Anticline has been the site of several exploration attempts over the last century. Approximately seven (7) wells were drilled within the proposed project site. However, the 1960's marked the last time any new wells were

drilled on the anticline. Attempts to produce from the existing wells took place in the 70's and mid 1980's. The wells were reentered but commercial production failed, for a variety of reasons, to come to fruition. Several of these wells remain idle and are considered orphaned by the California Department of Oil, Gas and Geothermal Resources. The CDOGGR is currently in the process of plugging and abandoning these orphaned wells.

2.2 Project Description

The project proposes to explore, test and possibly produce oil on approximately 260 acres on the western edge of the Huasna Basin, an existing California Department of Oil, Gas and Geothermal Resources ("CDOGGR") designated oilfield within the Meridian Anticline, an oil bearing geologic structure. Despite previous attempts to produce the field, little is still known about the underlying oil reserves. The project plans to use modern exploration techniques to ascertain if substantial oil reserves exist and determine if long-term production is commercially viable.

Prior to developing the proposed exploration project, Excelaron conducted technical analysis using existing data on the Huasna oilfield. This included obtaining all CDOGGR well records, existing well logs, and purchasing the limited seismic data available. A consulting geophysicist analyzed the existing data and made a series of potential reserve estimates. Additionally, other consulting geologists made recommendations regarding commercial viability based on experience with similar formations and the local petroleum industry. Based on these recommendations, Excelaron made the decision to pursue an exploration program to better determine the long-term viability of the Huasna oilfield.

Due to the exploratory nature of the project, several project phases have been developed to provide a more methodical framework to better assess the project at any given stage in the process. Phase I, the Exploration and Testing Phase, includes minor improvements to existing access roads and well pads to accommodate drilling and testing equipment. Four (4) new production wells will be drilled and tested over a six-month period. If the four wells fail to yield commercial quantities of oil, the wells will be properly plugged and abandoned, the site remediated, and the project will be concluded. If the four wells provide favorable test results, the project will move into Phase II, the Production Phase.

The Production Phase will result in the construction of permanent oil recovery facilities on site. A maximum of six (6) tanker trucks will transport product from the site daily to a nearby refinery. The facilities have been designed to efficiently recover all potential by-products from the producing wells, and accommodate any future expansion of the project. Additionally, Excelaron has agreed to clean up and abate any existing facilities left from previous operations. This clean up will take place during the Production Phase construction. If the Production Phase never occurs, Excelaron is still committed to pursue the clean up as part of the site closures and remediation activities. (See Phase III - Site Cleanup and Existing Well Abandonment Phase)

Phase IV, the Field Development Phase has been designed to better anticipate the reasonably foreseeable impacts associated with field expansion. The Field Development Phase includes the potential to drill an additional eight (8) production wells over the subsequent 4-year period. This would allow for additional data gathering, while limiting the foreseeable project growth to twelve (12) production wells in 5 years.

Existing ranch roads will provide for access not only to the well pads and shipping site from Huasna Townsite Road, but also through an adjacent ranch to Alamo Creek Road and ultimately on to State Highway 101. These existing roads will require minor grading, the installation of gravel and the application of soil binders/dust suppressants to ensure compliance with all regulatory agency requirements. See attached plan(s) for the layout of the Mankins' Ranch road (Mankins' Access Road – Area of Disturbance, Cannon, June 30, 2009). A new deck surface and stringers will be constructed on the County's Huasna Creek Bridge to accommodate a load capacity of twenty-five tons.

2.3 Project Phases I – IV

2.3.1 Exploration and Testing Phase

The primary objective of this phase of the project is to use modern exploration techniques to quantify the existing oil reserves, and ultimately allow the applicant to determine if the field's production is commercially viable. The exploration phase will include four (4) new oil wells on Assessor parcel numbers ("APN") 085-271-001 and 085-271-004. Exploration activities will occur on three (3) existing, previously graded pads that are accessed by existing ranch roads. Site preparation and exploration activities will take place over an approximate three-month period. Testing of the four production wells will take place over an approximate six-month period, following completion of the wells. Temporary facilities (i.e., portable "Baker" tanks, propane-driven generator, well pumps) will be in place to service the project during the testing phase. All vehicles associated with the site preparation and exploration activities will access the project site via State Hwy 166, Alamo Creek Road, existing roads on a private ranch (Porter Ranch access easement), Huasna Townsite Road, and existing roads on a private ranch (Mankins Ranch access easement).

2.3.2 Production Phase

The production phase of the project will be initiated if test results from the four (4) exploration wells provide information that oil can be produced in a quantity and quality determined to be economically feasible. Permanent facilities will be constructed on APN 085-271-004, on the lowest existing pad. Construction of permanent facilities will take place over an approximate one-month period. The following is a list of permanent facilities that will accommodate processing approximately 840 barrels of oil per day ("bbl/day"):

- Office trailer, portable toilets, processing/storage tanks, oil loading rack, generator, heaters, propane tanks, vapor recovery system, and miscellaneous safety equipment[1];
- Above ground piping from well pads to shipping pad;
- One (1) new reinjection/disposal well.

Vehicles associated with the construction of the permanent facilities will also access the site via State Hwy 166, Alamo Creek Road, existing roads on a private ranch (Porter Ranch access easement), Huasna Townsite Road, and existing roads on a private ranch (Mankins Ranch access easement).

A maximum of six (6) truck tanker trucks, with a 7000 gallon average capacity per truck, will service the site daily to transport product. The truck haul route would exit the site, travel south on Huasna Townsite Road to the end of the county maintained portion, then use existing ranch roads on the Porter Ranch south to Alamo Creek Road to Highway 166, then west to Highway 101 and its final destination. Tanker trucks will access the site via the same route. While a specific refinery has not been identified, the air quality analysis is based upon transporting oil to a refinery in Oxnard, California which would be the farthest, reasonable destination.

2.3.3 Site Cleanup and Existing Well Abandonment Phase

As previously described, the Huasna Valley has been the site of past oil exploration activities as far back as the late 1800's. Most recently, additional exploration activities were undertaken in the mid 80's. Multiple exploration activities under less stringent environmental regulations have resulted in the abandonment of old equipment and several idle wells. Concurrent with the Production Phase, Excelaron has committed to remove any remaining equipment, including pipelines, tanks, etc. from the site. If the project does not move into the Production Phase, the site will be cleaned up during the project's site cleanup activities. Additionally, Excelaron will clean and abate any identified hydrocarbon contaminated soils and associated oil contamination as these activities, excluding the existing seep. These activities fall under the jurisdiction of the California Department of Oil, Gas, and Geothermal Resources ("CDOGGR").

The CDOGGR has obtained funding through the State's Orphaned Well Program to properly plug and abandon all remaining idle wells on the project site. As of this date, the CDOGGR is in the process of obtaining all necessary permits and notifying the landowners.

2.3.4 Future Field Development Phase

The long-term production capabilities of the Huasna oil field are not known. The primary purpose of this project is to use modern exploration techniques to quantify the existing

[1] See Facility Engineering Report, Cannon, June 2009 for a complete list of permanent facility equipment.

reserves (i.e., reserve size, percent of and quality of recoverable oil, etc.) Until the initial exploration phase has been conducted and quantifiable data has been analyzed, any future field development is highly speculative. However, after repeated requests from the Huasna Valley community and County Planning & Building Department staff, Excelaron has prepared a future field development phase for the project. It should be underscored that the probability of this phase occurring is entirely dependent upon the success of the Exploration Phase. Additionally, other factors (e.g., the economic climate) may influence moving forward with the Field Development Phase of the project.

If long-term production of the initial four production wells proves to be economically viable, an additional two (2) production wells may be drilled in the following year. These wells will be drilled on the existing pads located on parcels 085-271-001 and 085-271-004. The operations described in the exploration/testing phases above will be conducted on these two wells. Should it be economically feasible to produce these wells, they will be added to the permanent operations.

Should the two (2) "Year 2" wells yield commercial quantities of oil, two (2) additional wells may be drilled, tested, and brought onto production for the next three-year period. At the end of a five (5) year period, a maximum of twelve (12) production wells and one (1) reinjection/disposal well would constitute the total field development operations. Permanent facilities, constructed during "Year 1" operations, will adequately service the twelve (12) wells. No additional tanker trucks (i.e., over and above the maximum six (6) tanker trucks) will be required to transport product from the site. Table 1 describes the timeframe for the reasonably foreseeable future field development of the applicant's lease holdings.

Table 1. Projected Field Development

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Production Wells	4	2	2	2	2	**12**
Reinjection Wells	1					**1**

2.4 Project Background

2.4.1 Geology

The Huasna Basin is a structural synclinal area approximately 10 by 35 miles in size, the long axis being oriented in a northwesterly direction parallel to the structure trends in this part of California. The Meridian Anticline is a sharply folded, doubly plunging structure lying adjacent to the Suey/W. Huasna Fault System. This structure is approximately 11,000 feet long and 3,000 feet wide at the base of the Monterey Formation.

The proposed exploration program seeks to explore and test the Monterey Formation for the commercial production of oil. The Monterey formation is divided into upper and

lower members. The lower member reaches a maximum thickness of 3,000 ft and is composed of dark brown, fractured siliceous shales, cherts and dolomites. This is the same composition of the Santa Maria basin where there is a good source of commercial quantities of oil. The upper member of the Monterey Formation averages 1,000 ft in thickness and is composed of fractured brown, porcelaneous shales and mudstones with local lenses of diatomaceous silts or sandstone. The native crude is believed to be a low gravity with 8-12° viscous oil.

Additionally, this exploration program plans to drill and test the Pt. Sal, Rincon, and Vaqueros Formations from 3500 feet to 5000 feet whose production capabilities are unknown. The primary deeper objective is the Vaqueros sands that vary considerably in thickness ranging from 100 to 600 feet. The Vaqueros is composed of mostly medium to coarse grained arkosic sandstone and quartz arenites. The native crude associated with this formation may be as high as 32° gravity.

The productive intervals for both the Monterey and Vaqueros Formations are unknown. The entire Monterey, including both members, could have up to 2,500 feet of potentially productive sections. The Vaqueros Sandstones may have up to 150 feet of productive interval

Overlying the Monterey Formation in the Huasna Area is the Santa Margarita Formation. Consisting of numerous members and submembers (Corbato and Hall, 1967) and a wide range of sediments, including sands, silts, clays and gravels, the Santa Margarita is 4000 to 7000 feet thick in the center of the Huasna Basin. However, at the project site, all of the 100-200 feet of claystones and siltstones have been removed through uplift and erosion.

An interpretation of past drilling activities, reprocessed seismic data, and surface mapping indicates the oil accumulation at Huasna is controlled by structural features. The feature is a NW-SE trending anticline with steep flanks that have dips in the order of 45 degrees. It is not known whether there is a common oil/water contact for the field and the actual thickness of the oil column. Typical volumetric calculations for reserves cannot be used in fractured reservoirs since the available data is insufficient. In light of the limited available information, our reserve calculations indicate there could be 10 – 16 million bbls of original oil in place ("OOIP") for the project site area with a recovery factor that could vary from 10 – 30%.

2.4.2 Land Owners, Mineral Leases, and Access Easements

The project site is located on private property owned by the Mankins family (APN 085-271-001 and 004) that extends from the valley floor into the hills to the west. Uses on the agriculture zoned property have historically included cattle grazing and associated agricultural activities. Portions of the property are currently under a Williamson Act contract. Excelaron has obtained an exclusive access easement over the Mankins Ranch that starts at Huasna Townsite Road and ends at the project site. A second access

easement has been obtained across the Porter Ranch that will allow project related traffic to access the valley via Hwy 166, Alamo Creek Road to Huasna Townsite.

In anticipation of Excelaron's exploration program, Excelaron has leased approximately 1,394 net mineral acres in the Huasna Valley area. This includes the 260-acre project site. The leasehold areas include the extent of the Meridian Anticline and do not extend into the valley floor. Private individuals hold the mineral interests, many of whom are descendants of multi-generation San Luis Obispo County families. All mineral leases have been recorded with the County of San Luis Obispo, and are therefore, part of the public record.

There are several reasons for leasing mineral acreage beyond the 260-acre project site. To date, the Huasna oil field is a relatively unknown entity with regards to the location, quantity and quality of the oil deposits. While the proposed project targets the 260-acre project site, this may not coincide with the area of the greatest oil accumulation. Additionally, if substantial oil deposits are found during the exploration program, maintaining additional leases within the Huasna oil field will protect our substantial investment from potential competitors. To illustrate this, a recent oil discovery in the Monterey Formation in the Santa Maria Basin was made in 1984. Known as the *Careaga Canyon Field*, the eventual net acreage for the oil accumulation was 250-acres, although the initial mineral leases prior to field development included approximately 1900-acres.

2.4.3 Exploration and Testing Phase Objectives

The purpose of the Exploration and Testing Phase is to obtain information regarding the Huasna Oil Field reservoir in order to determine the commercial viability of oil production. The existing data regarding the reservoir's production capabilities are outdated and incomplete. The drilling, testing, and long-term production of the first four (4) wells will result in a better understanding of the reservoir's size, recoverability, native crude quality, and ability to produce a commercially viable product.

The primary geological objective is the upper and lower members of the Monterey Formation, which is a known source of heavy 8-12° crude. This project has been designed to test the Monterey Formation for its commercial production capabilities. Combined, the upper and lower Monterey Formation may have up to 2,500 feet of fractured shale pay intervals (i.e., a section of the geologic objective that contains the commercially viable resource). Fractured shale pay intervals are identified during logging of the wells. Identifying these oil-bearing intervals within the fractured shale provides critical information for future production. If more than one pay section is encountered, zones can be isolated with appropriate plugs or a sliding sleeve.

Previous exploration attempts have focused on the Monterey Formation while very little is known about the underlying Pt. Sal, Rincon and Vaqueros Formations. As a secondary objective, the exploration program plans to drill the first well into the Vaqueros Formation. CDOGGR records indicate some light oil shows of 32° at 4500 feet in a

previous well test. The Vaqueros sands may have up to 150 feet of potential pay sections. Excelaron's geological analysis has concluded that there is minimal oil and gas potential in any sedimentary section below this depth. The commercial viability of this project is reliant on one or more of the above-mentioned formations.

2.4.4 The Exploration and Testing Phase Program

To obtain as much information as possible about the Huasna Oil Field's potential reserves, Excelaron proposes to drill, core and log the initial four (4) wells to gather geological data for computer simulation modeling. This data set will include the following items:

a) Fracture logs to supply data on the orientation and intensity of the fractures and their spatial distribution.
b) Cores to supply data on the orientation, intensity of the fracturing and also some quantitative data on fracture aperture width along with ascertaining whether the reservoir is oil wet or water wet. Oil saturation numbers are also required.
c) Fluid properties and data on whether there is a change in fluid with depth.
d) Pressure data with depth.
e) The establishment of an oil/water contact.
f) The establishment of the top of the oil accumulation.

An initial exploration well will be drilled to a target depth of 4500 feet within the Vaqueros Formation. Results from this initial well will provide valuable information for drilling the three additional exploration wells. If positive results are obtained from the Vaqueros Formation, the three remaining wells will be drilled to the 4500-foot target depth. If no positive results are yielded from the initial exploration well, the remaining three wells will be drilled to solely evaluate the fractured Monterey Formation. The depth or thickness of the pay intervals will influence well spacing. If thick Monterey Formation pay intervals are encountered during drilling, then spacing of the subsequent wells is not an issue. However, if the drainage area of wells accessing the fractured reservoir is large, the subsequent three wells may need to be deviated or directionally drilled.

Drilling operations will occur on a 24-hour per day basis. All equipment required for the drilling operations will be temporary and will be removed after completion of the drilling. It is anticipated that each well would be drilled within a two-week period. During this period, approximately ten (10) employees per 12-hour shift will be onsite. Production testing will be take place over an approximate six-month period. If any of the wells prove to be unproductive, they will be plugged and abandoned pursuant to CDOGGR and San Luis Obispo County standards.

2.4.5 Enhanced Oil Recovery Methodologies ("EORM")

2.4.5.1 Hot Water Flood

After careful examination of data provided from previous exploratory operations, and in consideration of existing technology and available power sources, hot water flood is the preferred enhanced oil recovery method ("EORM"). Hot water flood requires heated water, to approximately 150° F, to be reinjected down the wells. The efficiency and effectiveness of a hot water flood in the Huasna Oil Field is unknown at this time.

The hot water flood method provides a heat source directly to the producing formation (e.g., Monterey Formation) to lower the viscosity of the fluids in the reservoir. The heat from the hot water flood can have an effective radius up to 150 feet from the well bore. It is estimated that using a hot water flood as an EORM is effective up to a depth of approximately 2000 feet, due to heat loss. This makes it an effective recovery method for the primary 8-12° API oil. Any oil deposits existing beyond the depth of 2000 feet would need to be produced under primary recovery scenarios (i.e., under natural pressure). The lower geologic objectives may be produced under primary recovery scenarios under the following circumstances: 1) the gravity of the oil is significantly higher; or 2) the temperature gradient of the Monterey or Vaqueros Formations is higher than normal for those depths.

The water used for flooding purposes will be the produced water associated with the oil reservoir, which is typically an emulsion of oil and water, and sometimes gas. Water is captured and stored in tanks located at the facilities site. During the water knockout process, oil is separated from the water. The quality of the water will be saline, likely approaching 5000 ppm of total dissolved solids ("TDS"). This produced water will not require filtration prior to reinjection, only separation from any residual oil. Since the reinjected water was originally withdrawn from the producing formation, reinjection will not pressurize the formation.[2]

2.4.5.2 Hot Water Flood vs. Alternative EORMs

Both hot water flood and steam injection enhanced oil recovery methodologies were used during previous exploration efforts in the Huasna Oil Field. Previous records indicate that the production results were negligible between the two methodologies. Other fields that produce from the Monterey Formation use steam injection as an EORM (e.g., San Ardo, Monterey County where they steam in a sand facies unit of the Monterey Formation and not in the fractured shale intervals). Steam injection allows for the heat to infiltrate deeper into the fractures from the well bore resulting in higher production numbers. By

[2] The reinjected water originates from the producing formation and will be reinjected in the same formation. For example, if 400 bbls of oil and 400 bbls of water are extracted, and 400 bbls of water is returned to the formation reservoir, there will be a net loss of 400 bbls of fluid (extracted oil) and therefore a very low chance of pressurizing the reservoir. It is noteworthy that the CDOGGR regulates the pressure that can be applied for reinjection to a specific horizon within the formation.

comparison, steam injection as an EORM has proven to be a more effective method of recovery than hot water flood. However, steam injection was determined to be an economically infeasible alternative based upon current power sources in the Huasna Valley, energy demands and the requirement for large quantities of fresh water associated with the methodology. Production facilities have been designed to use propane and any produced natural gas for the heat and electrical needs of the proposed project.

2.4.5.3 Hydraulic Fracturing

As previously stated, the initial exploration well will be drilled into the Pt. Sal, Rincon and Vaqueros Formations to an approximate depth of 4500 feet. The remaining wells, based upon the results of the initial well, may be drilled in the Monterey Formation. The Monterey Formation is not only the source of the oil in the Huasna area, but also represents the reservoir rock[3]. The Monterey Formation contains rock that is naturally fractured as a result of diagenetic changes in the rocks during increased burial pressure and temperature over geologic time. Consequently, it is unnecessary to "hydraulically fracture" this type of rock, as the rocks are already fractured. Additionally, hydraulic fracturing is not a typical production methodology and is not being considered for this project.

2.4.5.4 Acidizing

Acidizing or the use of hydrochloric ("HCl") acid is a methodology typically used in reservoir stimulation where the objective sediments are high in calcite or calcareous content. Essentially, the acid dissolves the calcite or calcareous cement in the fractures thereby improving the permeability of the objective sediments. It is noteworthy that the Monterey Formation being drilled in the Huasna area is primarily siliceous material. There is little or no chemical reaction between silica-rich rocks and HCl acid. Acidizing will not be used. Additionally, no diluents (e.g., products used to dilute higher viscosity oil. An example would be KD diluent – a refined kerosene product) will be utilized for this project.

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[3] **Hydraulic fracturing** is a method used to create fractures that extend from a borehole into rock formations, which are typically maintained by a proppant, a material such as grains of sand or other material which prevent the fractures from closing. The method is informally called **fracing** (pronounced "fracking") or **hydrofracing**. The technique of hydraulic fracturing is used to increase or restore the rate which fluids, such as oil, gas or water, can be produced from the formation surrounding the borehole. By creating or restoring fractures, the reservoir surface area exposed to the borehole is increased and the fracture provides a conductive path connecting this reservoir surface area to the well, which effectively increases the rate that fluids can be produced from the reservoir formations.

2.4.6 Production and Process

2.4.6.1 Facilities

The production facilities will be installed during the Production Phase. A description of the facility components and layout, energy use, and the operational aspects are contained in the attached engineering report (Facility Engineering Report – Huasna Valley Oil Field, Cannon Associates, June 2009). The onsite facilities, designed to accommodate 840 bbl/day, provide for processing of produced fluids and gases prior to shipping the product (crude oil) off site. The facilities include a simple water knockout system that separates the crude oil from any produced water and natural gas. Both the produced water and natural gas are recycled for use within the production system. Produced water is either reinjected as part of the EORM or disposed of into the formation through a disposal well. Should natural gas be produced, it will be used as an additional fuel source.

All produced oil will be transported by tanker truck from the onsite shipping point to an off site refinery (e.g., Nipomo, Santa Maria, Oxnard). Once the permanent operation is fully functional, one (1) employee per 8-hour shift will supervise the project site on a 24-hour/7days/week basis. The supervising employee will oversee all operations, shipping functions, and would notify the proper authorities in case of emergency.

2.4.6.2 Cyclic Reinjection and Production

Production wells will be hot water flooded on a rotating schedule. Cyclic reinjection includes reinjecting one well for a period of time and then subsequently producing that well. The quantity of water to be reinjected or the frequency of reinjection will be dependent upon a number of factors that will be determined during well operation. These operational characteristics will also impact the duration of effective production. For the purposes of preparing the Facility Engineering Report, several reasonably foreseeable design assumptions were made regarding the operational aspects of reinjection.

In addition to cyclic reinjection, excess produced water will be disposed of into the producing formation through an approximately 2500 foot deep disposal well, located at the shipping site. It is estimated that between 120 and 1128 bbls/day of produced water will be disposed of in the disposal well (See Cannon Facilities Design Report, June 30, 2009). The disposal of produced water back into the formation is strictly regulated and monitored by the CDOGGR. Excelaron will be required to provide supporting data that the formation can accept the produced water.

2.4.6.3 Water Cut

Water cut is defined as the quantity of water in the oil/water emulsion, expressed as a percentage. Although the exact water cut for the Huasna Oil Field is unknown, the State

average of 83% water (17% oil) was used for the project calculation. Considering the production history of the Huasna Oil Field, it is likely that the initial water cut will be much lower. Higher water cuts (83%-99.7%), represent the average water cuts today in the existing oil fields of California. This higher percentage is due to the age of the producing fields (i.e., 50-100 years) and the long-term effects of the cyclic reinjection (i.e., the cycle of hot water flooding and/or steam injection and production over time).

In an oil field's early development, the initial water cut is typically less than 10%. This is based upon the fact that the oil and gas literally float above the water. As oil and gas are extracted over time, the level or depth of the oil/water contact in the reservoir rises, with water taking the place of the volume of oil and gas that gets produced each year. Consequently, each year that the field produces oil and gas, the oil percentage begins to decrease and the produced or associated water increases. This is commonly known as reservoir depletion or decline rate.

As a field approaches maturity, the water cuts rise to levels exceeding 80%. This higher water cut percentage is not necessarily related to a field's commercial viability, as this is dependent upon multiple variables. It is noteworthy that many of Santa Maria's oil fields, with average water cuts greater than 90%, have been economically viable for the last 30-40 years.

2.4.6.4 Well Production

The rate at which any given well can produce is at the heart of a field's commercial viability. Oil production from new wells can be as high 120-150 bbl/day/well. However, over time, individual well production will decrease, and then eventually level off. The project's Engineer's Facility Report estimates that production on an individual basis could decrease to approximately 60 bbl/day. It is estimated that this decline and leveling off may occur within the first year of production for each well. A decline in initial production is a common occurrence and the facilities have been designed to accommodate the initial higher production rates.

2.4.6.5 Natural Gas Production

As noted, propane will be used as the fuel source for the initial start-up of well production. As production progresses, some natural gas may be produced along with the oil. However, the Monterey Formation historically has a low gas/oil ratio when producing low gravity oil. Therefore, it is anticipated that any of the associated natural gas would be utilized to fuel well engines and for heating during the oil and water processing. The need to flare excess gas is not required. The use of produced natural gas will lower the consumption of propane over time.

2.4.6.6 Facilities Shutdown

As noted, project related vehicles will have access over the Porter Ranch private access easement. A portion of this road is adjacent to the upper reaches of the Twitchell Reservoir. The upper reaches of the Twitchell Reservoir have been known to periodically flood. Excelaron has agreed to cease operations (i.e., shut down production from active wells and related facilities and stop all truck ingress/egress) should access on the Porter Ranch private easement be impacted by floods. To better define the criteria when operations will be required to cease, an analysis of the potential flood conditions has been prepared. (See attached Porter Ranch Access Road/Twitchell Reservoir Report, Cannon Associates, July 6, 2009).

2.4.7 Field Development Program Objectives

As previously stated, the purpose of the Exploration and Testing Phase is to obtain information about the Huasna Oil Field's reservoir potential and its economic viability for commercial production. A successful exploration program will provide more detailed information about the underlying formations, oil reserves, and long-term production capabilities. The initiation of the field development program will be entirely dependent upon the results of the exploration program, and at this juncture, is highly speculative. Nonetheless, in response to community requests we have designed a reasonably foreseeable field development program. The field development program represents the maximum build-out scenario.

The objective formation(s) well bore locations and pay sections will be determined based upon the results of the previous four (4) well exploration program. Directional drilling will allow the use of the three (3) existing pad locations to explore locations beyond these areas. . Modern technology has made it possible to explore a wide geographic area while leaving a small surface footprint. The advent of directional and horizontal drilling will allow for field development with a much smaller footprint and a 60-70% reduction in the number of requisite wells required.

Based on the limited data available to date, oil reserves are estimated at 10–16 million bbls of OOIP. The recovery factor is unknown at this time, but is estimated to be between 10 – 30%. The average lifetime production rate of an oil well drilled in the Monterey Formation is approximately 300,000-400,000 bbls. Assuming a normal recovery factor due to directional drilling and well stimulation, twelve (12) production wells should be able to effectively produce the reservoirs underlying the project site. Data will be collected from each production well as it is drilled and tested over a long-term period. This data will help shape a clearer picture of the Huasna Oil Field and its long-term commercial production capability.

2.4.8 Field Development Program

If long-term production of the initial four (4) wells proves to be favorable, an additional two (2) production wells may be drilled in the following year. These wells will be drilled on the three existing pads on parcels 085-271-001 and 085-271-004. The operations described in the exploration/testing phase will be conducted on these wells. Should these wells prove to be economically feasible for long-term production, they will be added to the current facilities. No additional facilities will be required for these two additional wells, as the existing permanent facilities will provide adequate capacity.

The balance of the proposed field development program will include two (2) wells to be drilled, tested, and brought into production over the next three year period. At the end of the five year period, a maximum of twelve (12) production wells and one (1) reinjection/disposal well will have been drilled and brought onto production. These twelve (12) wells represent the maximum amount of production wells foreseeable in the near future.

2.4.9 Economic Viability

Exploring and ultimately understanding the Huasna Oil Field is at the foundation of this project. The more data that can be gathered about the underlying reserves, the better the field's economic viability can be assessed. The exploration program has been carefully designed to obtain as much information as reasonably and feasibly possible. In response to community requests, we have created a development program on the reasonably foreseeable field development of twelve (12) wells. At this time, it is highly speculative whether this project will move beyond the Exploration and Testing Phase and into the Production Phase and/or any subsequent development program.

The economic viability of pursuing this project to the Production Phase at this juncture would also be highly speculative. Until adequate data from the four (4) exploration wells is analyzed, the true economics of the project are difficult to ascertain. The viability of an oil field relies on a number of variables: geologic; operational, and economic. Geologic variables include reserve size and recoverability. Operational variables include drilling, construction, shipping and fuel costs. Economic variables are largely dependent on the current market price of crude oil.

3.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT ("CEQA") ANALYSIS

3.1 SITE INFORMATION

Assessor Parcel Number(s)	085-271-001, 085-271-004
Latitude: Longitude:	120 degrees 23' 44,395" N 35 degrees 5' 16.867" W
Supervisorial District	Four (4)
Planning Area	South County (Inland), Huasna/Lopez; Rural
Land Use Category	Rural Lands, Agriculture
Ag. Preserve	Yes, Parcel 085-271-001
Parcel Size	Two parcels totaling approximately 259.76 acres
Present Use and Development	Undeveloped. Rangeland, agricultural roads, CDOGGR designated oil field
Surrounding Uses/Zoning	North: Agricultural; undeveloped South: Rural Lands; sparsely scattered homes, undeveloped East: Rural Lands & Agriculture; undeveloped West: Rural Land & Agriculture; sparsely scattered homes, undeveloped
Topography	Nearly level to very steeply sloping
Vegetation	Grasses, chaparral, oak woodland, riparian

3.2 AESTHETICS

3.2.1 Setting

The floor of Huasna Valley is generally considered to be a rural setting with scattered homes on parcels ranging from less than 5 acres to over 1,000+ acres. Land uses are predominately farming or ranching, while the surrounding backdrop of prominent hills is covered in oak woodlands and chaparral habitats (which are moderately intact). The

overall visual quality of this area is considered to be "high."

Portions of the existing project site [i.e., northern portion of the existing proposed (Well Pad 2) cutslope and portions of the existing Mankins Ranch access road] are partially visible from two viewing points on Huasna Townsite Road (from a distance of approximately 1.25-1.75 miles). The proposed new facilities will be located to be completely concealed by existing oak trees / topography from these viewing areas. The existing pad / proposed Well Pad 2 was originally created in the 1960's, with minor improvements made during the 1980's oil exploration.

The Shipping Site will contain all production facilities and be the locale for most of the activity involved with long-term production. This area is not visible to the public from any vantage point, as it is located in a small valley that is obscured by topography.

The revised project proposes no development on the previously considered "Upper Well Pad." Vegetation has successfully reestablished on the cut and fill portions of the existing access roads and well pads in this location.

Nighttime lighting is limited to the Shipping Site, which is at the valley floor between two ridges that intersect direct views to Huasna Townsite Road, and the Suey Creek area.

3.2.2 Impacts

The following represent the potential impacts that relate to visual resources.

1. Minor grading will be required to widen the access roads and prepare the proposed well pads prior to exploration and testing activities, which will result in cuts and fills.
2. A drill rig will be used for any new oil well drilling. The drilling operations will take up to three (3) months. When extended, the drill rig mast (approximately 100 feet tall) may be visible on portions of the proposed well pads and visible from the Shipping Site.

   This short-term visual impact for the first four (4) production wells and one (1) re-injection/disposal well, and the potential field development scenario, is not considered significant.
3. A portion of the permanent oil production facilities and accessory structures on the proposed well pads could be visible from Huasna Townsite Road.
4. Water / oil storage and the separation process will be carried out at the Shipping Site. This area is not visible from any public road, and is not considered potentially significant.
5. CalFire's 30-foot and 100-foot fuel modification requirements around well heads and at the Shipping Site, as well as the 10-foot fuel modification along access roads, could result in substantial exposure of the well pad, existing access roads, and previous large cut and fill areas created to establish the proposed well pads and road.
6. Existing storage tanks on proposed Well Pad 2 are currently visible, but will be

removed as part of the proposed project. Any existing above-ground piping will also be removed.

7. Up to 4,500 linear feet of above-ground piping will be needed to transport unprocessed crude from the well pads to the Shipping Site and processed water back to the well pads. Pipelines will be constructed along the existing access road to minimize areas of impact and provide for ease of maintenance.
8. Night lighting for safety and security is proposed only at the Shipping Site, which is not visible from public view. Lighting at the Shipping Site will be shielded and of low-intensity. Additional lighting may be necessary on a temporary basis when intermittent operations occur in the dark. Drilling is proposed to occur 24 hours/day, 7 days/week. Overall, night lighting impacts are less than significant.
9. Leaks from the proposed well pads and above-ground pipes (e.g., crude oil, processed water, etc.) within a tree's canopy/dripline could have the potential to adversely impact existing trees.

3.2.3 Applicant Proposed Measures

The following measures, incorporated into the project description, will reduce impacts to aesthetic resources to less than significant levels:

- All existing oaks and larger shrubs that provide screening for pads, equipment, or access roads will be identified as "Key Screening Vegetation" on all applicable construction plans. Great care will be taken so that any negative impact to these plants (from new grubbing or grading) will be avoided. Specifically, the plants will be protected with fencing prior to initiation of any of these activities.
- Should the location of new equipment, well pads, or access roads be visible by the unaided eye from Huasna Townsite Road, a landscape plan will be prepared with the intent of providing full screening of the proposed well pad. Plant material will be limited to appropriate native trees and shrubs (e.g., oaks, manzanita, etc.)
- Additional tree planting will be provided should any project-related operation (e.g., pad equipment, etc.) or grading (e.g., newly visible cut and fill slopes, etc.) activities result in new publicly visible impacts (i.e., from Huasna Townsite Road).
- All equipment (e.g., storage tanks, oil pumps, etc.) left in place on the proposed well pads for more than 30 days will be painted a dark, muted non-reflective color.
- The pre-existing storage tanks, currently visible on the proposed Well Pad 2 will be removed, and therefore will not require CalFire fuel modification. Any fuel modification of vegetation will be conducted by hand (i.e., no use of mechanized equipment) with a focus on providing the minimum pruning required by CalFire and retention of trees/sensitive species. Fuel modification for understory plants will be provided by leaving the base of the plants intact to retain root structures; this will minimize erosion and maximize the potential regrowth into a low fuel

load state.

- The construction plans will identify clean topsoil to be set aside and stockpiled, and be used for any revegetation efforts on visible cuts from Huasna Townsite Road. Sufficient clean topsoil will be reapplied or re-keyed over these visible cut areas to provide at least 8" of topsoil for the reestablishment of vegetation. A native or non-invasive seed mix (developed by a biologist or landscape architect familiar with native plants in the area) will be used to revegetate disturbed areas.
- A cost estimate for a planting plan, installation of landscaping, and maintenance of new landscaping (should the county determine these necessary) for a period of three years will be prepared by a qualified individual, and reviewed by the County Department of Planning and Building.
- Regular and routine repair of transmission piping will be carried out to minimize potential leak impacts to trees.
- The visible portion of the access road width will be limited to the minimum required by CalFire.
- At the time of application for construction permits, it will be specified that no permanent night lighting will be installed for Well Pads 1 and 2. All night lighting for the Shipping Site will be hooded, and will use the lowest lumens and lowest glare possible, while still being OSHA compliant.
- Weekly inspections for leaks or spills in the following areas will be carried out: all above-ground distribution lines, Well Pad 1 and Well Pad 2 (including 15 feet outside of the bermed areas) and the Shipping Site (including 15 feet outside of the bermed areas). At a minimum, a report/checklist will be prepared that includes the date and time surveyed and the ground conditions for each of the above-specified areas, as well as note the health of the "key viewing" vegetation within these areas.
- Should a leak occur, all efforts will be made to immediately take appropriate measures to stop the leak, remove any contaminated soils, and protect existing vegetation; any permanently impacted trees will be replaced at a 4:1 ratio. Additionally, the County will be notified immediately if any leak or spill is found.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.3 AGRICULTURAL RESOURCES

3.3.1 Setting

The following area-specific elements relate to the property's importance for agricultural production:

Land Use Category: Rural Lands, Agriculture

Historic/Existing Commercial Crops: None

State Classification: Not prime farmland

In Agricultural Preserve? Yes

Under Williamson Act contract? Partially

The soil type and characteristics on the **subject property** include:

Santa Lucia shaly clay loam (50 - 75% slope). This very steeply sloping, north-slope gravelly fine loamy soil is considered not well drained. The soil has low erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: steep slopes, shallow depth to bedrock. The soil is considered Class VII without irrigation and does not have a Class rating when irrigated.

The soil types and characteristics on the **southern access road (Porter easement)** include:

Salinas loam (0 - 2 % slope). This nearly level loamy bottom soil is considered not well drained. The soil has moderate erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: slow percolation. The soil is considered Class III without irrigation and Class I when irrigated.

Riverwash. This variably sloped soil has unrated drainage characteristics. The soil has unrated erodibility and unrated shrink-swell characteristics, as well as having unrated septic system constraints. The soil is considered Class VIII without irrigation and Class is not rated when irrigated.

Corralitos sand (0 - 2 % slope). This nearly level sandy bottom soil is considered well drained. The soil has moderate erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: poor filtering capabilities. The soil is considered Class VI without irrigation and Class IV when irrigated.

Pismo-Tierra complex (9 - 15 % slope)

Pismo. This moderately sloping soil is considered very poorly drained. The soil has low erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: shallow depth to bedrock. The soil is considered Class VI without irrigation and Class is not rated when irrigated.

Tierra. This moderately sloping soil is considered very poorly drained. The soil has moderate erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: slow percolation. The soil is considered Class VI without irrigation and Class is not rated when irrigated.

Briones-Tierra complex, (15 - 50% slope)

Briones. This moderately to steeply sloping sandy soil is considered moderately drained. The soil has low erodibility and low shrink-swell characteristics, as well as

having potential septic system constraints due to: poor filtering capabilities, steep slopes, shallow depth to bedrock. The soil is considered Class VII without irrigation and Class is not rated when irrigated.

Tierra. This moderately to steeply sloping soil is considered very poorly drained. The soil has moderate erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: steep slopes, slow percolation. The soil is considered Class VII without irrigation and Class is not rated when irrigated.

Lopez very shaly clay loam (30 - 75% slope). This steeply to very steeply sloping, shallow gravelly fine loamy soil is considered very poorly drained. The soil has low erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: shallow depth to bedrock. The soil is considered Class VII without irrigation and Class is not rated when irrigated.

Santa Lucia shaly clay loam (50 - 75% slope). This very steeply sloping, north-slope gravelly fine loamy soil is considered not well drained. The soil has low erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: steep slopes, shallow depth to bedrock. The soil is considered Class VII without irrigation and Class is not rated when irrigated.

Perkins fine sandy loam (2 - 9 % slope). This gently sloping coarse loamy soil is considered not well drained. The soil has moderate erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: slow percolation. The soil is considered Class III without irrigation and Class II when irrigated.

Perkins gravelly fine sandy loam (9 - 30% slope). This moderately sloping gravelly coarse loamy soil is considered not well drained. The soil has moderate erodibility and low shrink-swell characteristics, as well as having potential septic system constraints due to: steep slopes, slow percolation. The soil is considered Class IV without irrigation and Class is not rated when irrigated.

Land use designations and agricultural uses of the surrounding properties are as follows:

North: Agriculture/undeveloped, rangelands	East: Agriculture/undeveloped, rangelands
South: Rural Lands/undeveloped	West: Rural Lands/undeveloped

Due to a portion of the project being on a property under a Williamson Act contract, the originally proposed project was reviewed by the Agricultural Preserve Review Committee ("APRC") to determine its potential impacts to on-site and nearby agricultural uses. The Committee determined that the project would not have a significant impact to agriculture with a majority of the committee supporting the project. The proposed use is an allowed use for lands under contract. The Agricultural Preserve Review Committee may review the current project.

3.3.2 Impacts

The APRC reviewed the potential impacts of the project's proposed oil well pads, shipping facilities, and on-site access roads and no potentially significant impacts to the existing cattle grazing use were identified. However, the following represent other potential impacts that relate to agricultural resources:

1. Project related vehicles may generate dust from traveling along existing all-weather access roads. The APRC suggested that dust should be controlled to protect crops in Huasna Valley. Similarly, dust control would be proposed for the private access road.
2. An existing seep (circular in shape and about 20 feet in diameter) is located near the Shipping Site and contains both surface water and oil. If consumed, this water/oil mixture could be detrimental to wildlife and cattle.

3.3.3 Applicant Proposed Measures

No direct impacts to existing agriculture were identified by the Agricultural Preserve Review Committee. Nonetheless, the following measures will be incorporated into the project description:

- Soil binders and gravel will be used on on-/off-site access ranch roads on an ongoing basis in order to control dust. This method will achieve APCD's 20 % opacity requirement and will not have an adverse impact to oaks and down-gradient water sources (i.e., approved by CDFG).
- At the time of application for construction permits, a sturdy fence (withstand cattle rubbing) and mesh, will be shown on the construction plans. This fence will be placed around (above high water line) the existing natural water/oil seep (adjacent to the lower shipping site) with the intent of keeping out cattle, livestock, birds, and moderately-sized mammals (e.g., foxes, badgers, etc.) and amphibians (e.g., frogs, etc). In addition to the fencing, netting on the top of the fencing will be installed with the intent of keeping birds from entering the seep from overhead. The fencing and netting will have as small of mesh size as possible to minimize wildlife entering the seep area through the fencing/netting, and will be installed prior to the second notice to proceed.
- The fence and mesh will be inspected weekly at a minimum by an employee, or when a monitor is on-site, and repaired within seven (7) days of discovery of disrepair. If the oil seep expands and/or spreads beyond the fenced area, the fencing and netting will be expanded to surround the entire oil seep area. If any animal becomes trapped within the enclosure and appears to be non-oiled and in good health, a temporary opening in the fencing/netting will be created to allow the animal to escape. If the animal is oiled, distressed, or in an unhealthy state, the California Department of Fish and Game ("CDFG") or county-approved animal rescue group (e.g., Pacific Wildlife Care) will be contacted to handle the animal. Telephone numbers of such approved organizations will be kept posted for easy reference for all employees.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.4 AIR QUALITY

3.4.1 Resource Documents and Reports

1. *Air Quality Impact Analysis, Excelaron, LLC Huasna Valley Oil Exploration Project, San Luis Obispo, California*, Golder Associates, Inc, July 2009.
2. *Geologic Hazards Report, Excelaron Conditional Use Permit, Huasna Valley, San Luis Obispo County, California,* Earth Systems Pacific, July 2009.
3. *Correspondence to C.M. Florence, AICP Agent from James L. Beebe, PhD, D (ABMM), Director, Public Health Laboratory,* June 12, 2009.

3.4.2 Setting

The 260-acre project site is located in the steep hillsides adjacent to Huasna Valley. The closest residences to the Shipping Site are approximately 2,300 feet to the west and 2,500 feet to the east.

The private access road from Huasna Townsite Road to the Shipping Site is approximately one (1) mile and unpaved. The southern private access road to Highway 166 includes approximately 6 ± miles of unpaved ranch road. The closest oil refining facility to this location in the County is approximately 13 miles to the west on the Nipomo Mesa. All air emission calculations have been prepared based upon the reasonably foreseeable worst case scenario of transporting oil to a refinery in Oxnard, CA.

The following provides a summary of historic and existing air quality conditions that relate to the project's potential air quality impacts. Air quality impacts (i.e., air pollutant emissions) can be generated from both mobile and stationary sources.

Non-Attainment. The County is within the South Central Coast Air Basin, which is currently considered by the state as being in "non-attainment" due to an exceedance of acceptable thresholds levels for particulate matter (PM_{10} or fugitive dust) and ozone.

The Air Pollution Control District ("APCD") estimates that automobiles currently generate about 40% of the pollutants responsible for ozone formation. Pollutants such as nitrous oxides (NOx) and reactive organic gasses ("ROG") (vehicle emission components) are common contributors toward this chemical transformation into ozone. Dust (particulate matter less than ten microns) that becomes airborne can act as the catalyst in this chemical transformation to harmful ozone.

APCD Program. To address project impacts, APCD has developed a program (*CEQA Air Quality Handbook*) to establish impact threshold levels and mitigation measures to

address most project-related air quality impacts. The Clean Air Plan ("CAP") is the regional guidance document providing strategies to improve air quality for SLO County. The CAP is also periodically updated to review the effectiveness of the implemented strategies and if changes are appropriate.

Local Air Quality. The project is nearest to the Nipomo Regional Park and Black Mountain Air Quality Monitoring Stations. Based on the latest air monitoring station information, the trend in air quality in the general area is considered unchanged for PM_{10} and ozone, and below the threshold levels set for the State and Federal.

3.4.3 Regulatory Framework

As required by Section §22.10.030 of the County's Land Use Ordinance, the proposed project will be referred to the County of San Luis Obispo Air Pollution Control District for review. Excelaron and the project's air quality consultant have previously worked with APCD to address the project's potential impacts through the preparation of an air quality impact analysis.

APCD Permitting. The project will be subject to an APCD Engineering Permit and Controls for the proposed generator emissions, product storage tanks, truck loading rack, and well gas emissions. The geologic hazards report (Earth Systems Pacific Consulting Engineers and Geologists, July 2, 2009) has determined that no naturally occurring asbestos ("NOA") exist on the project site.

Developmental Burning. On February 5, 2000 the APCD prohibited burning of vegetative material within San Luis Obispo County; however, in certain situations where no technically feasible alternative is available, limited burning under restrictions may be allowed. Unregulated burning would result in a potentially significant air quality impact.

Hydrocarbon-contaminated soil. The previous oil well testing efforts may have resulted in isolated spills or leaks of crude oil or other hydrocarbon based fluids.

Odors. As specified in the County's LUO Section §22.10.030, any non-agricultural land use conducted in or within one-half mile of an urban or village reserve line shall be operated so as not to emit matter causing noxious odors which are perceptible at the points of determination identified in the following table:

Land Use Category where Odor-Producing Use is Located	Point of Determination
Residential, Office and Professional, Recreation, Commercial	At or beyond any lot line of the lot containing the use
Industrial	At or beyond the boundary of the Industrial category

The project is well beyond one-half mile from an urban or village reserve line.

Greenhouse Gases ("GHG"). The California Air Resources Board ("CARB"), the California Environmental Protection Agency ("CalEPA"), and other governmental

agencies with jurisdiction are in the process of developing guidelines and thresholds to address a project's cumulative contribution to greenhouse gas ("GHG"). There are seven (7) greenhouses gases, associated with global warming potential: Carbon dioxide, Methane, Nitrous oxide, Chlorofluorocarbons, Hydrofluorocarbons, Perfluorocarbons, and Sulfur hexafluoride. GHG emissions are combined according to their Global Warming Potential ("GWP") and reported in terms of carbon dioxide equivalents (CO2e) and emission rates in terms of metric tons per year. No quantitative significance thresholds or mandatory mitigation measures for GHG emission sources have been adopted by the State of California (other than mandatory reporting of the emissions inventory from selected sources), the APCD, or the County of San Luis Obispo.

Valley Fever. Coccidioidomycosis (also known as Valley Fever, San Joaquin Valley Fever, California Valley Fever, and Desert Fever) is a fungal disease caused by *Coccidioides immitis* or *C. posadasii*. It is endemic in certain parts of Arizona, California, Nevada, New Mexico, Texas, Utah, and northwestern Mexico.

C. immitis resides within the soil in certain parts of the southwestern United States, northern Mexico, and parts of Central / South America. It is a dimorphic saprophytic organism that grows as a mycelium in the soil and produces a spherule form in the host organism. *C. immitis* is dormant during long dry spells, and then develops as a mold with long filaments that break off into airborne spores when the rains come. The spores, known as arthroconidia, are swept into the air by disruption of the soil (by activities such as during construction or farming). Infection is caused by inhalation of the particles - it cannot be transmitted from person to person. It has also been known to infect humans, dogs, cattle, and livestock, among other mammals.

The disease is usually mild, with flu-like symptoms and rashes. On occasion, those particularly susceptible (e.g., pregnant women; people with weakened immune systems; and those of Asian, Hispanic and African descent) may develop a serious or even fatal illness from Valley Fever. Serious complications could include severe pneumonia, lung nodules, and disseminated disease (the fungus spreads throughout the body). The disseminated form of Valley Fever can devastate the body, causing skin ulcers and abscesses to bone lesions, severe joint pain, heart inflammation, urinary tract problems, meningitis, and death.

The San Luis Obispo County Health Department conducted a study in 2007 due to a Valley Fever outbreak in the North County. The report identifies construction crews involved with moving previously undisturbed soils in inland areas, especially in the fall, are at a higher risk of coming in contact with this airborne fungus. The report includes a number of measures to reduce the potential for this organism from infecting humans.

3.4.4 Impacts

A detailed project description, including the proposed equipment list, propane fuel consumption, and mobile and stationary sources was provided to Golder Associates, Inc. to prepare a project specific air emissions model, determine impacts, and provide mitigation measures, as required. The potential for Valley Fever has been addressed with

the assistance of Dr. James. L. Beebe, Director, Public Health Laboratory, San Luis Obispo County Health Agency. The potential for naturally occurring asbestos was analyzed by Earth Systems Pacific.

Short-Term Impacts

The following is a list of activities and/or operations related to the Site Preparation and Exploration/Testing Phase of the proposed project.

1. Disturbance of approximately 2.2 acres to prepare existing pads and access roads (up to 46,370 cubic yards of cut and 25,480 cubic yards of fill cubic yards), including the possible encounter of soils containing "Valley Fever" spores, naturally occurring asbestos, and/or contaminated soils.
2. Installation of approximately eight (8) CalFire turnouts along the southern ranch access road (approximately 5,000 square feet of disturbance).
3. Short-term construction vehicle and equipment emissions, including fugitive dust generation.
4. Drilling operations and associated drilling fluids that contain minimal amounts of volatile hydrocarbons and are considered a negligible air pollutant source.
5. Greenhouse gas emissions associated with mobile and stationary sources.
6. Demolition and/or removal of existing 'abandoned' equipment from previous testing.
7. There is also a possibility that complaints under the District's 402 "Nuisance" Rule could be received from the public.

Long-term Impacts

The following is a list of long-term activities and/or operations related to the Production and Field Development phases of the proposed project.

1. Portable/on-site propane fueled generators will be used to operate oil wells and other on-site facility processes, including propane heaters for the heating the wash tank, re-use water tank, and stock tanks.
2. Natural gas may be generated as a component of the extraction process.
3. Tanker haul trucks and miscellaneous vehicles will produce mobile source emissions and fugitive dust.
4. Greenhouse gas emissions associated with each of the mobile and stationary sources.

3.4.5 Applicant Proposed Measures

The following measures have been incorporated into the project description. Each mitigation measure will be employed as necessary to ensure that the emissions from each of the project phases do not exceed the applicable significance threshold levels.

Site Preparation and Exploratory/ Testing Phases

- Should construction activities reveal NOA, the project will prepare an APCD Asbestos Dust Mitigation Plan and/or Asbestos Health and Safety Program.
- To minimize nuisance dust impacts, APCD fugitive dust (PM_{10}) mitigation measures will be implemented. These measures include reducing the amount of disturbed area where possible; the use of water trucks or sprinkler systems to water down airborne dust; daily spraying of dirt stock-pile areas; paving of applicable surfaces as soon as possible after grading; and installing permanent structures as soon as possible.
- To eliminate "visible" dust (with opacity of 20% or more) the access roads, well pads and shipping site on the Mankins Ranch and ungraveled portions of the access road on the Porter Ranch will be graveled. A CARB and EPA approved dust suppressant will be applied to the graveled roads to supplement the dust control efforts.
- To minimize the effects of vegetative burning on regional air quality, burning of vegetation will be avoided. If no alternative is available, a burn permit will be obtained from the APCD and CalFire. (No vegetative burning is proposed.)
- If any hydrocarbon-contaminated soil is discovered during grading activities, the project operator will notify APCD within 48 hours of the discovery; APCD will determine if a permit is necessary. Any existing spills will be cleaned up as part of the project.
- No standardized methods for testing for Valley Fever (*Coccidioides immitis)* exist. Nonetheless, the San Luis Obispo County Health Agency recommends implementation of the following measures. See correspondence from Dr. James L. Beebe for a comprehensive list of measures.
    - Update the Injury and Illness Prevention Program and/or Worker Safety Plan;
    - Train all employees regarding Valley Fever, its symptoms, precautionary and control measures;
    - Implement dust control measures;
    - Prevent transport of cocci outside endemic areas; and
    - Improve medical surveillance for employees.

Production and Field Development Phases

- Prior to the start of any drilling activities and first notice to proceed, a permit from the APCD will be obtained, as required. To minimize potential delays, the applicant will contact the APCD Engineering Division for specific information regarding permitting requirements as far as possible in advance to the start of the project.
- Any portable equipment, 50 horsepower (hp) or greater, used during construction or operation of the facility will require California statewide portable equipment

registration (issued by the California Air Resources Board) or an APCD permit. The following list is provided as a guide to equipment and operations that may have permitting requirements (to be obtained prior to first notice to proceed), but should not be viewed as exclusive. For a more detailed listing, refer to page A-5 in the District's CEQA Handbook.

  - Drilling Rig
  - Power screens, conveyors, diesel engines, and/or crushers;
  - Portable generators and equipment with engines that are 50 hp or greater;
  - IC engines;
  - Concrete batch plants;
  - Rock and pavement crushing;
  - Tub grinders; and
  - Trommel screens.

- There will be no discharge of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort repose, health or safety of any such person or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- An Odor Monitoring and Complaint Response Plan will be prepared. This plan will be jointly approved by the APCD and Environmental Health, prior to the start of construction and first notice to proceed, and fully implemented during the life of the project.
- All petroleum facilities will be operated and maintained so as to prevent the escape of hazardous or noxious vapors and any other hazardous emissions.
- Prior to construction permit issuance, evidence of review and approval from Environmental Health that the air quality impact assessment was adequately completed will be provided to the County.
- Petroleum operations in designated "potentially hazardous emission areas" shall be subject to the following requirements.
  - Within sixty (60) days of notification by Environmental Health to proceed, a plan for detecting and monitoring emissions of hydrogen sulfide, organic sulfides or a combination thereof will be submitted to Environmental Health.
  - Said detection and monitoring plan will include:
    - An appropriate number of sensing points;
    - Recording tape instrumentation with a demonstrated capability to detect and record in the range five to five hundred ppm hydrogen sulfide, and to activate visible and audible alarms;
    - Provisions for registering an alert at ten ppm and an emergency at thirty ppm, with appropriate health and safety response steps for each stage as approved by Environmental Health;

- An implementation schedule for said plan. Approval of the plan will not be unreasonably withheld by Environmental Health.

- Operations will be conducted so that ambient gas concentrations will not exceed any of the following hydrogen sulfide concentrations for the corresponding time intervals:
  - Ten ppm for more than eight hours.
  - Thirty ppm for more than one hour.
  - One hundred ppm for more than ten minutes.
  - Two hundred ppm for more than five minutes.
  - Three hundred ppm for more than one minute.
  - Five hundred ppm for instantaneous.

- Operations of petroleum facilities where ambient concentrations exceed ten ppm at any sensing point designated in the approved monitoring plan will immediately take steps to reduce such ambient concentrations to below ten ppm for the above specified time period, with facility shutdown required if necessary. Facilities at which concentrations exceed the above specified limits more than twice in one month or four times in one year, except for acts of God, riots and vandalism, will require shutdown until the facility can be operated within the required regulations.

- Personnel safety and protection will comply with the requirements of the State Division of Industrial Safety and/or the regulations of the State Occupational Safety and Health Act, whichever is the more restrictive.

- Removal of existing equipment from previous exploration efforts will be removed during initiation of the Production Phase of the project. As a part of this effort, the project will be subject to various regulatory jurisdictions, including, but not limited to the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M – asbestos NESHAP). These requirements include, but are not limited to: 1) notification requirements to the District, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM.

  This requirement will also apply to all new project-related equipment. All equipment will be properly removed at the point when production is determined infeasible or the wells are no longer producing oil. A County acceptable financial instrument for this work will be posted prior to construction permit issuance.

- Low NOx heaters and late model propane generators will be used.

- Process heaters will meet a stringent NOx emission concentration limit of 20 ppm.

- Engines that power the drill rig(s) will be certified to meet Tier 3 or better emissions standards.

- Vapor recovery system(s) ("VRS") will be installed and maintained for the life of

the project per APCD permit requirements. The VRS will capture natural and methane gasses to be burned as an onsite fuel source, if those gases are present.

- GHG emissions will be reduced as a result of the use of mandated emissions reductions of criteria pollutants, primarily NOx. The production equipment to be used will be new and meet current energy efficiency guidelines. The storage tanks will be insulated to minimize heat loss and fuel use.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.5 BIOLOGICAL RESOURCES

3.5.1 Resource Documents and Reports

1. *California Red-legged Frog Site Assessment, Site and Well Pad Development, Mankins Ranch and Porter Ranch Roads, Excelaron LLC, Huasna Valley, San Luis Obispo County, CA,* Sage Institute, Inc., July 17, 2009.
2. *Excelaron LLC Huasna Site Well Pad Development and Porter Ranch Haul Road Supplemental Floristic Inventory and Rare Plant Survey, and Updated Oak Tree Impact Analysis,* Sage Institute, Inc., July 20, 2009.
3. *Botanical Study – Roadside along Cuyama Highway (Highway 166) 500 Feet East and 1000 Feet West of Alalmo Creek Road Intersection,* V.L. Holland, Ph.D., January 28, 2009.
4. *Botanical Survey – Private Access Easement Road Corridor, Southwestern San Luis Obispo County, CA,* David J. Keil, Ph.D., September 18, 2008
5. *Addendum to Oak Tree, Wells' Manzanita, and Creek Crossing Evaluations, Huasna Well Sites and Access Roads,* V.L. Holland, Ph.D., April 21, 2008.
6. *Addendum to Wildlife Survey for the Huasna Site,* Michael T. Hanson, Ph.D., April 20, 2009.
7. *Oak Tree, Wells' Manzanita, and Creek Crossing Evaluations, Huasna Well Sites and Access Roads,* V.L. Holland, Ph.D., March 12, 2008.
8. *Wildlife Survey for the Huasna Site,* Michael T. Hanson, Ph.D., June 6, 2007.
9. *Huasna Well Sites and Access Roads,* V.L. Holland, Ph.D., May 14, 2007.

3.5.2 Setting

The following describes the existing biological conditions on or near the proposed project site.

On-site Vegetation: Mankin's Ranch: grassland, chaparral/coastal scrub, coast live oak woodland, riparian woodland; Porter Ranch: grassland, chaparral/coastal scrub, coast live oak woodland, riparian woodland;

Name and distance from blue line creek(s): Mankin's Ranch: Project crosses Huasna Creek and one unnamed tributary; shipping site and well pads are at least ½ mile from Huasna Creek; Porter Ranch access road: access road crosses two tributaries to Huasna River; access road parallels portions of Huasna River.

Site's tree canopy coverage: Densities between 34% to 75% on the Mankins Ranch; 76% to 100% for a small portion of southern access ranch road.

Based on the latest California Natural Diversity Data Base ("CNDDB"), and other biological references, the following is a list of sensitive vegetation, wildlife and/or habitat that have been identified as potentially being within the vicinity of the proposed project:

Miles's milk-vetch *(Astragalus didymocarpus* var. *milesianus)* has been found about one mile to the east. This annual herb is found on clay soils in coastal scrub habitat between the 20 and 90-meter elevation (65 to 300 feet). The typical blooming period is March-June. Miles's milk-vetch is considered rare by CNPS (List 1B, RED 2-2-3).

Southwestern pond turtle (*Emys (*or *Clemmys) marmorata pallida*) has been found along Alamo Creek Road. Southwestern pond turtle is a federal and California Species of Special Concern. This is an aquatic turtle that uses upland habitat seasonally. They occur in ponds, streams, lakes, ditches, and marshes. The species prefers slow-water aquatic habitat with available basking sites nearby. Hatchlings require shallow water habitat with relatively dense submergent vegetation for foraging.

American badger (*Taxidea taxus*) have been found along Highway 166. In California, Badgers range throughout the state except for the humid coastal forests of northwestern California (Del Norte and Humboldt Co). Badger populations have declined drastically in California within the last century (Grinnell et al., 1937; Longhurst, 1940), where they now survive only in low numbers in peripheral parts of the central valley and adjacent lowlands to the west in eastern Monterey, Mendocino, San Benito and San Luis Obispo counties. In California, Badgers occupy a diversity of habitats. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated ground. Grasslands, savannas, and mountain meadows near timberline are preferred. Badgers prey primarily on burrowing rodents such as Gophers (*Thomomys*), Ground Squirrels (*Spermophilus, Ammospermophilus*), Marmots (*Marmota*), and Kangaroo Rats (*Dipodomys*). They are predatory specialists on these rodents, although they will eat a variety of other animals, including mice, Woodrats, reptiles, birds and their eggs, bees and other insects, etc.

Deliberate killing probably has been a major factor in the decline of Badger populations with many people regarding them as detrimental to their interests. Cultivation is adverse to Badgers, as they do not survive on cultivated land. Agricultural and urban developments have been the primary causes of decline and extirpation of populations of Badgers in California. Rodent and predator poisoning pose double threats through direct and secondary poisoning of Badgers and elimination of the food Badgers are dependent upon. Shooting and trapping of Badgers for animal "control" is another source of mortality.

California red-legged frogs (*Rana aurora draytonii*) ("CRLF"). The California Natural Diversity Database ("CNDDB") has a CRLF recorded occurrence (May 2006) at a culvert outfall plunge pool in Cat Canyon Creek, just upstream of the confluence with the Huasna River to the northeast of the Huasna Townsite Road bridge crossing of the river. The California red-legged frog is listed as federally threatened, and is considered a California Special Concern species by the California Department of Fish and Game ("CDFG") (CDFG, 2002). They historically have ranged from Marin County southward to northern Baja California. Presently, Monterey, San Luis Obispo, and Santa Barbara counties support the largest remaining California red-legged frog populations within the state.

The California red-legged frog is a large (85-138 millimeters) reddish-brown frog with variable red pigment on the ventral surfaces. Riparian habitat degradation, urbanization, predation by bullfrogs, and historic market harvesting have all reportedly contributed to population declines in this species. The species occurs in varied habitats during its life cycle. Breeding areas include lagoons, streams and ponds, including siltation and irrigation ponds. California red-legged frogs typically breed from January to July, with peak breeding occurring in February. Juvenile frogs are found in open, shallow aquatic habitats containing dense emergent vegetation.

The largest densities of California red-legged frogs are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation. Although the species can inhabit ephemeral streams or ponds (i.e., all surface water sporadically disappears), populations probably cannot be maintained within them. Adult California red-legged frogs are primarily nocturnal, although metamorphs and juveniles are known to be active during the day and night.

Vernal Pool Region The project site occurs within the Santa Barbara Vernal Pool Region designated by the CDFG. Vernal pool habitat consists of seasonal wetlands (i.e., areas that pond water during the wet season and dry up during the summer months) that may provide habitat for sensitive aquatic plant and animal species.

Existing Seep Adjacent to the proposed Shipping Site area is a circular seep, approximately 20 feet across, that contains both an emanation of oil and water.

3.5.3 Botanical/Biological Reports

Sage Institute, Inc. has prepared comprehensive biological and botanical reports. The reports build upon the previous biological reports (wildlife and botanical studies) and include the results of a comprehensive spring-time botanical survey and a United States Fish and Wildlife Service ("USFWS") protocol survey for California red-legged frogs. Additional biological survey work was conducted for the proposed intersection improvements at Alamo Creek Road and Highway 166, as required by CalTrans.

The initial botanical reports identified the following habitats: grassland, chaparral/coastal scrub, coast live oak woodland. The reports identified the potential loss of sixteen (16) Well's manzanita (*Arctostaphylos wellsii*) related to the upper pad which is no longer a part of the project description and impacts to oaks along the periphery of the pads and

access road.

The reports also evaluated the three (3) tributary crossings on the Mankins Ranch in order to determine impacts, should improvements be required by CalFire. The report concluded that no wetland or riparian vegetation was found within ten (10) feet of either side for all of these crossings. No direct impacts to riparian or wetland habitats were identified.

Potential impacts from the proposed southern access ranch road to Highway 166 were also analyzed. The report evaluated all creek crossings and low-lying areas, as well as all areas along the ranch road. No riparian vegetation was identified within close proximity of the existing access road as it crosses any of the Huasna River tributaries, or parallels the Huasna River. However, the report did identify one (1) sensitive species, the Leafy Tarplant *(Deinandra increscens* ssp. *Foliosa)*, and the potential for several other species that can only be identified during the spring blooming season.

As such, a supplemental floristic inventory and rare plant survey was conducted in the spring of 2009. This report indicated that the Leafy Tarplant *(Deinandra increscens* ssp. *Foliosa)* identified previously was, in fact, a Paniculate (leafy) Tarplant *(Deinandra paniculata),* which is a widespread species occurring southward to San Diego County, and is identified as a CNPS list 4 species. No sensitive species were found.

An initial wildlife survey was prepared for the proposed project (Hansen, April 2007). After surveying the area proposed for development, the biologist concluded that no amphibians, reptiles or mammals were found on site that are listed as Endangered or Threatened Animals of California (both State and Federal). This would include the California red-legged frog.

A second biological report (Wolff, October 2008) was conducted for the proposed southern access road and the potential impacts on the California red-legged frog. The report assumed presence of the CRLF and provided mitigation measures, accordingly. The most recent CRLF protocol survey has definitively identified its presence within the Huasna River near the Porter Ranch.

Additionally, the southwestern pond turtle and American Badger were found near Alamo Creek Road. No improvements are proposed for this road, and any improvements required by Caltrans (e.g., left turn lane, acceleration/deceleration lanes, etc.) are not expected to impact any areas not already in a disturbed state and well away from any water body. The additional survey work regarding the intersection improvement footprint work did not identify any sensitive species.

3.5.4 Applicable Agency Regulations

State of California and County of San Luis Obispo – Regulations for Oak Woodlands. On January 1, 2005, the State of California enacted an *Oak Woodland Conservation bill (SB1334)* that amended the Public Resource Code to include greater oak woodland protection measures from new discretionary development (California Environmental Quality Act §21083.4). The more significant changes include: defining the size of oak

tree; requiring a fee or conservation easement to address at least one half of the impacts; and requiring seven (7) years of monitoring for replanting efforts.

San Luis Obispo County ("County") attempts to minimize impacts to existing oak trees through the CEQA process. When that is not possible, the County typically applies the following replacement ratios for "impacted" and "removed" oak trees.

- "Removed" trees – replace with four (4) in-kind seedlings; and
- "Impacted" trees - replace with two (2) in-kind seedlings.

Regional Water Quality Control Board – Regulations for Storm Water Pollution Prevention Plan. The proposed project will disturb more than one (1) acre. Therefore, a *Stormwater Pollution Prevention Plan* ("SWPPP") will be prepared and approved by the Regional Water Quality Control Board. The SWPPP will include measures to reduce potential sedimentation, erosion, and drainage impacts to existing downstream water sources.

CalFire. The project is within a "very high" fire severity zone as defined by CalFire. In addition to the minimum thirty (30) foot clearance of vegetation around proposed structures, an additional seventy (70) feet beyond (100 feet total) the edge of each new structures will be required as to further reduce fire hazards. A ten (10) foot side clearance and fourteen (14) foot vertical clearance of the access roads is additionally required for further fuel modification.

Federal - Migratory Bird Treaty Act. The federal *Migratory Bird Treaty Act* (16 U.S.C., Sec. 703, Supp. I, 1989), prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of Prey are protected in California under the State Fish and Game Code §3503.5 (1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. This approach applies to red-tailed hawks, American kestrels, burrowing owls, and other birds of prey. Project impacts to these species would not be considered "significant" unless they are known or have a high potential to nest on the site or rely on it for primary foraging.

Also, the federal *Bald Eagle Protection Act* prohibits persons within the United States (or places subject to U.S. jurisdiction) from "possessing, selling, purchasing, offering to sell, transporting, exporting or importing any bald eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof."

3.5.5 Impacts

The following represent the potential impacts to biological resources.

1. As proposed, the number of trees within 30 feet of the access roads, well pad site(s), and shipping site that will be impacted, as defined by the County, include:
   - One hundred sixty one (161) coast live oaks to be pruned;
   - Two (2) coast live oaks to be removed;
   - Sixteen (16) valley oaks to be pruned; and
   - Six (6) blue oaks to be pruned.

   A total of up to approximately 185 oaks will be impacted. These impacts could include removal, pruning of overhanging limbs, and substantial encroachment into the tree's root zone.
2. The paniculate (leafy) tarplant (*Deinandra paniculata)* has been located on the proposed project site in the following areas:

   - A patch of approximately 15,500 individuals on Well Pad 2;
   - A total of 599 individuals at the shipping site and access road.

   The widely spaced improvements for turnouts (every ½ mile) along the Porter Ranch road could result in scattered impacts on a few paniculate (leafy) tarplants. However, it should be noted that this is a widespread species - occurring southward to San Diego County, and is on the CNPS list 4. Additionally, the approximately 16,000 plants impacted are in a previously disturbed area and represent only 5 percent of the total local occurrence on the Mankins and Porter ranches observed in 2009. Thus, impacts on this species would be considered a less than significant impact.
3. The proposed trimming, as well as establishment of the proposed activities, could have impacts to potential nesting or roosting trees that may support migratory birds or birds of prey.
4. Without adequate controls, erosion and sedimentation could adversely impact down gradient surface waters and associated wildlife.
5. Spillage or leakage of crude oil and related toxic constituents could adversely impact the sensitive vegetation located near the leak or spill, as well as to down gradient surface waters and associated wildlife.
6. Impacts to other sensitive species were identified as follows:

   - Manzanita could be found during above-ground pipe installation;
   - Nesting birds could be found in and around project limits during construction;
   - Other wildlife (e.g., American badger, California red-legged frog) may be found during construction;
   - Sensitive wildlife may be encountered during project operations (e.g., California red-legged frog during rainy season).

3.5.6 Applicant Proposed Measures

The following measures, as incorporated into the project description, will reduce biological impacts to less than significant levels.

General Measures

- All equipment staging areas, construction-crew parking areas, and construction access routes will be established in previously disturbed or developed areas.
- Exclusionary fencing will be erected at the boundaries of construction areas to avoid equipment and human intrusion into adjacent habitats with emphasis on protection of areas containing special status species and oaks. The fencing will remain in place throughout the construction phase for each individual project component.
- To protect biological resources from spills, a Spill Contingency Plan will be prepared to ensure the undertaking of prompt and adequate response and removal action in case of an oil spill or spill of other deleterious material. The Spill Contingency Plan will include provisions for preventing and responding to spills to avoid and/or minimize impacts to the environment including the tributary to Huasna Creek.
- The following measures will be implemented to avoid impacts to Huasna Creek and Huasna River (and their tributaries), and to avoid potential long-term degradation of nearby wetland habitat areas from projected long-term utilization of the site. These measures will be depicted on construction plans.
    - All work at Mankin's Ranch tributary crossings will be limited to within 10 feet of each side of the existing crossings.
    - A Sedimentation and Erosion Control Plan will be prepared, per the County's Land Use Ordinance standards;
    - Any site improvements will be completed outside of the rainy season unless a Sedimentation and Erosion Control Plan is approved.
    - All necessary permits for placement of permanent structures over any blue line creek/tributary (including fill activities) will be obtained (e.g., permit from the U.S. Army Corps of Engineers pursuant to 404 of the Clean Water Act, Water Quality Certification from the Regional Water Quality Control Board pursuant to 401 of Clean Water Act, and/or a Streambed Alteration Agreement or waiver from the California Department of Fish and Game pursuant to Section 1600 et seq. of the California Fish and Game Code).
- During project construction, equipment refueling and concrete washing will be conducted in non-sensitive areas (i.e., at least 100 feet from any blue line creek shown on a 7.5 minute quad map), and in a manner that any spills can and will be easily and quickly contained and cleaned up without entering the creek, its tributaries, or groundwater. As appropriate, the refueling area and concrete washout areas will be specified on construction plans with clear signage installed to denote these areas.

- Project tanks located in areas where damage to natural resources might occur as a result of tank leakage will employ methods for control of the spilled fluid and detection of tank-bottom leaks. This may be accomplished by employing a combination of the following containment and detection methods, which will be shown on all applicable plans.
    - For containment:
        - A drainage system for safe fluid containment;
        - Diversion walls to direct fluids to a preferred collection point;
        - Dikes or fire walls will be capable of containing 150% of the largest tank's volume. Tank settings in urban areas will have dikes;
        - Structures enclosing tanks shall be impervious and contain 150% of the largest tanks volume.
    - For leak detection:
        - A tank installation that allows the exterior surface, including the bottom of the tank and connection piping, to be monitored by direct viewing;
        - A tank foundation of concrete;
        - A tank bottom leak detection system.
- The following oilfield facilities and equipment maintenance measures will be denoted on all applicable construction plans, and will be implemented during the life of the project:
    - Well cellars will be covered and kept drained. Grating or flooring will be installed and maintained in good condition so as to exclude people, wildlife, and domestic animals. Cellars will be protected from surface runoff water;
    - Production facilities, including but not limited to, tanks, pipelines, flow lines, wellheads, and separators will be maintained in a manner to prevent leakage;
    - Other production facilities and equipment, including but not limited to pumping units, compressors, tanks, and skimming devices, will be installed and maintained properly for the protection of people, wildlife, and domestic animals;
    - Pipelines will be designed, constructed, tested, operated, and maintained in accordance with good oil field practice and applicable standards, such as the American Petroleum Institute (API)(API Rec. Prac. 1110, 3rd Ed., Dec. 1991, and API Spec. effective 1990) or American Society for Testing and Materials (ASTM) (ASTM Designation Stand. Spec., 1991), Code of Federal Regulations 49, Part 192, or other applicable standards for the transportation of oil, gas, produced water, and other fluids. Good oilfield practice includes, but is not limited to, the following:
        - Utilization of preventative methods such as cathodic protection and corrosion inhibitors, as appropriate, to minimize external and internal corrosion;

- Employment, where practical, of equipment such as low-pressure alarms and safety shut-down devices to minimize spill volume in the event of a leak;
- Evaluating the applicability of locating any new pipelines or parts of a pipeline system that are being relocated or replaced above ground;
- The use of pipe clamps or screw-in plugs are not considered good oilfield practice for permanent repair of pipeline leaks.

- All above-ground pipelines will be inspected visually for leaks and corrosion at least once a year. If such leaks or serious corrosion is encountered, they will be fixed as soon as possible, but not longer than within 48 hours of discovery.
- Maps of all pipelines will be maintained and updated whenever pipelines are installed, repaired or removed.
- A mechanical integrity test will be performed on all above ground pipelines, every two (2) years. Pipelines less than ten (10) years old are exempt from the two year testing requirement. These tests will be performed to ensure the pipeline does not present a threat to public health, safety, or the environment by using at least one (1) of the following methods:
  - Nondestructive testing using ultrasonic or other techniques approved by the Supervisor, to determine wall thickness;
  - Hydrostatic testing using the guidelines recommended in Publication API RP 1110 (3d Ed., Dec. 1991), Testing of Liquid Petroleum Pipelines, or the method approved by the State Fire Marshal, Pipeline Safety and Enforcement Division;
  - Internal inspection devices such as a smart pig, as approved by the Project Supervisor;
  - Or any other method of ensuring the integrity of a pipeline that is approved by the Project Supervisor.
- Copies of test results will be maintained for six (6) years and made available to the Division of Oil, Gas and Geothermal Resources ("CDOGGR") and the County of San Luis Obispo, upon request. Any pipeline that fails the mechanical integrity test will be repaired and retest or removed from service. The CDOGGR will be promptly notified in writing of any pipeline taken out of service due to a test failure.
- A qualified hydrogeologist will prepare a surface water testing program to be implemented during construction and for the life of the project, and submit it to the County for approval, to accomplish the following:
  - Establish a surface water quality baseline for Huasna Creek and its tributary near the Shipping Site;
  - This program will also incorporate other related plans (e.g., Spill Prevention Plan, etc.) and regulations (Environmental Health, RWQCB) relating to the course of action to take should elevated amounts of these harmful constituents be coming

from the proposed project. At a minimum, surface water testing will be initiated in the fall immediately after the season's "first flush" (i.e., large enough storm event resulting in running water), and then monthly through the rainy season, or as long as there is a live creek;

- Should contaminants from the project site exceed baseline concentrations or exceed any regulatory threshold harmful, a qualified person will evaluate impacts to the biological and/or water quality resources to determine appropriate remedial actions to be approved by all necessary agencies.
- Should any harmful contaminant be found above baseline, that is associated with the project, drilling operations will cease temporarily until the problem has been fixed, as deemed appropriate by the County.

- Preconstruction/Tailgate training will be conducted by the Environmental Monitor to discuss all construction-related biological issues. All workers will complete this training prior to conducting work within the project boundaries, including driving on southern ranch access road. For on-site workers, an obvious visible indicator (e.g., "completed training" decal on hardhat, etc.) will be worn at all times.

Vegetation Related Measures

- All efforts will be made during construction to minimize impacts to native vegetation.
- Tree impacts from construction activities will be limited as follows: a) no removal of any tree having a five (5) inch diameter or larger at four (4) feet from the ground; and b) "impacting*" no more than approximately 185 trees having a five (5) inch diameter or larger at four (4) feet from the ground. This impact to oak trees qualifies as oak woodland habitat loss warranting "oak woodland" mitigation.

  * Impact is defined as follows. *If any of the following conditions exist, the tree is considered "impacted" for the purposes of applying the 2:1 replacement:*

    1. *More than 10% of the tree mass is removed (using certified arborist practices), or any limb larger than 5", whichever is less;*
    2. *New encroachment within the tree's root zone, which is defined as any area within the tree canopy edge/dripline before any oak branch trimming.*
    3. *Encroachment activities include:*
       a. *Any cutting or trenching into soil (directional boring that is more than 24 inches below surface is exempt)*
       b. *Adding any fill*
       c. *Compaction of soil from vehicle (one single pass within canopy footprint is exempt) or any other compacting activity*
       d. *Any grubbing that involves soil disturbance*
       e. *Any storage of materials or equipment*
       f. *Paving within dripline*

g. Irrigation/overspray within tree dripline

h. Establishment of non-native, invasive understory plants

4. *If 50% or more of the root zone is impacted or tree mass is removed, the tree will be considered "lost" and be replaced at a 4:1 basis.*
5. *All trees impacted through prior, approved practices preceding the proposed project shall be noted before work begins and not counted as tree impacts;*
6. *Any storage of liquids, including washout areas for concrete, etc., will not be allowed within the tree canopy edge/dripline; any spills or leaks of toxic substances within the canopy edge/dripline and 10 feet beyond the canopy edge/dripline would constitute an impacted tree, or potentially lost tree if the spill or leak is extensive.*

- Construction plans will clearly delineate all trees within 50 feet of the proposed project, and will show which trees are to be impacted, and which trees are to remain unharmed. Adequate protection measures (e.g., sturdy fencing) per the approved construction plans will be installed to protect those trees identified to remain unharmed as well as to minimize impacts for those trees identified as being impacted.
- Unless previously approved by the County, the following activities will <u>not</u> be allowed within the root zone of existing or newly planted oak trees: 1) year-round irrigation (no summer watering, unless "establishing" new tree or native compatible plants); 2) grading (includes cutting and filling of material); 3) compaction (e.g., regular use of vehicles, etc.); 4) placement of impermeable surfaces (e.g., pavement, etc.); 5) disturbance of soil that impacts roots (e.g., tilling, etc.).
- Trimming of oaks will be minimized as follows. Removal of larger lower branches should be minimized to: 1) avoid making tree top heavy and more susceptible to "blow-overs"; 2) reduce having larger limb cuts that take longer to heal and are much more susceptible to disease and infestation; 3) retain the wildlife that is found only in the lower branches; 4) retain shade to keep summer temperatures cooler (retains higher soil moisture, greater passive solar potential, provides better conditions for oak seedling volunteers); and 5) retain the natural shape of the tree. Tree trimming will be limited in any one season as much as possible to limit tree stress and/or shock.
- Oak tree impacts will be mitigated as follows:
    - No less than ½ of the "impacted" (see previous definition above) trees will be mitigated through one or a combination of the following approaches:
        - Tree Fee – for each "impacted" tree a fee of $485 shall be applied, which will be given either to a County-recognized organization with an oak woodland restoration/acquisition program, or to the Wildlife Conservation Board; and/or
        - Conservation Easement – either establish an on-site Conservation Easement with a county-approved land trust (or similar organization) to protect an in-kind number and size of trees (an "impacted" tree equals ½ of a removed tree), or pay into a county-recognized Conservation

Easement program being administered by a land trust (or equivalent);

- For the remainder of impacted trees not addressed above, on-site replanting will be performed, if required pursuant to the following.
  - For on-site replacement/planting purposes, each "impacted" tree will be replanted by the applicant with two (2), in-kind seedlings. Replanting will be completed as soon as it is feasible. Replant areas will be either in native topsoil or areas where native topsoil has been reapplied. If the latter, topsoil shall be carefully removed and stockpiled for spreading over graded areas to be replanted.
  - Location of newly planted trees should adhere to the following, whenever possible: on the north side of and at the canopy/dripline edge of existing mature native trees; on north-facing slopes; within drainage swales (except when riparian habitat present); where topsoil is present; and away from continuously wet areas (e.g. lawns, leach lines).
  - Newly planted trees will be maintained until successfully established. This will include protection from animals, regular weeding of at least a three-foot radius out from plant, and adequate watering. Watering should be controlled so only enough is used to initially establish the tree, and reducing to zero over a three-year period.
  - A cost estimate prepared by the applicant for a planting plan, installation of new trees, and maintenance of new trees for a period of seven (7) years will be prepared by a qualified individual and will be reviewed and approved by the County Department of Planning and Building. A performance bond, equal to the cost estimate (plus administrative costs), will be posted.
  - Prior to any grading or site grubbing, all trees to remain on-site that are within fifty feet of construction or grading activities will be marked for protection and their root zone will be fenced. The outer edge of the tree root zone to be fenced will be outside of the canopy 1/2 again the distance as measured between the tree trunk and outer edge of the canopy (i.e., 1-1/2 times the distance from the trunk to the drip line of the tree), unless otherwise shown on the approved construction plans.
  - Grading, utility trenching, compaction of soil, or placement of fill will be avoided within these fenced areas. If grading in the root zone cannot be avoided (per approved construction plans), retaining walls will be constructed where feasible to minimize cut and fill impacts. Care will be taken to avoid surface roots within the top 18 inches of soil. If any roots must be removed or exposed, they will be cleanly cut and not left exposed above the ground surface.
  - Weed removal around newly planted vegetation will be completes as follows: 1) no herbicides will be used; 2) either installation of a) a securely staked "weed mat", or b) hand removal of weeds and use of weed-free mulch with regular replenishment, will be completed for each new plant. If the hand removal weeding option is selected it will be kept up on a regular basis at least once in late

spring (April) and once in early winter (December) until plant is 3 feet tall or for seven (7) years, whichever occurs first.

- To minimize impacts to the sensitive oak woodland understory, the following measures will be implemented for the life of the project:
  - All native vegetation removal will be shown on all applicable grading/ construction or improvement plans, and reviewed/ approved by the County (Planning and Building Dept.) before any work begins;
  - Vegetation removal of native habitat will be limited to what is shown on the county-approved grading/ improvement;
  - Vegetation clearance for fire safety purposes will be limited to the minimum setbacks required by CalFire. Where feasible, all efforts will be made to retain as much of this vegetation within the setback as possible (e.g. remove/trim only enough vegetation to create non-contiguous islands of native vegetation);
  - No livestock will be allowed in any restoration areas.
- Above ground distribution piping will be located to avoid sensitive resources to the greatest extent possible. While no manzanita were identified for removal, some potential for impacts exists should new above ground pipelines need to replace the existing pipelines. During grubbing and/or grading for installation of any above-ground pipeline**,** a County-approved biological monitor will be a part of the survey crew to identify any sensitive species that could be impacted, including Well's manzanita *(Arctostaphylos wellsii*). Prior to removal of any such species, sufficient cuttings or seed will be taken for nursery propagation, if feasible.
- To minimize impacts to the paniculate (leafy) tarplant the following measures will be implemented for the entire access easement area.
  - Areas of paniculate (leafy) tarplant occurrence will be avoided to the greatest extent feasible;
  - Turnout areas will be located at least 50 feet away from leafy tarplant occurrences;
  - Where disturbance to paniculate (leafy) tarplant is unavoidable, the top four to six inches of surface material (including plant duff and leaf litter) will be salvaged and stockpiled separately for use in a one time effort for restoring new areas of paniculate (leafy) tarplant;
  - Given the CNPS List 4 status under the current naming convention, no success criteria are recommended for this annual species beyond documenting the salvage and use of the surface material in impacted areas (primarily Well Pad 2).

Wildlife Measures

- To minimize impacts to the California red-legged frog on the southern ranch road access, the following measures will be implemented:
  - Large metal signs will be installed on each side of the two (2) low-lying areas connecting to Huasna River with the following information that can be easily read by drivers: "**5 mph max** between signs when ground is wet. **Do not pass** if

surface water is present on road".

  - These signs will be kept in good working order for the life of the project, as long as this road is used for project vehicle access.

- The following measures relating to the Huasna River Bridge improvements will be implemented:
  - Any improvements made to Huasna River Bridge (e.g., installation and/or replacement of the top deck, etc.) will be completed in a manner that stays out of the riverbed and all work is conducted above the top of bank.
  - To reduce sediment entering the river, the existing dirt road between the south end of Huasna Townsite Road and the bridge, as well as the first 100 feet south of the bridge will be paved with a rumble strip installed.
- A pre-construction survey will be conducted by a qualified biologist on the project to identify if badgers are using any portion of the site near where disturbance is proposed. The survey will cover the entire project boundaries (and 100 feet beyond), including the southern access ranch road, and will examine both old and new dens.
- If the pre-construction survey finds potential badger dens, they will be inspected to determine whether they are occupied by badgers. Occupation of the den will be determined by one or more of the following methods:
  - Use a fiber optic scope to examine the den to the end;
  - Partially obstruct the den entrance with sticks, grass, and leaves for three (3) consecutive nights and examine for signs that animals are entering or leaving the den;
  - Dust the den entrance with a fine layer of dust or tracking material for three consecutive nights and examine the following mornings for footprints.
- Inactive dens will be excavated by hand with a shovel to prevent re-use of dens during construction. If badgers are found in dens between August and January, a qualified biologist will establish a 50-foot diameter exclusion zone around the den entrance. To avoid disturbance and the possibility of direct take of badgers, no construction, grading, or staging of equipment will be conducted within the buffer area until the biologist has determined that the badgers have vacated the den. If badgers are found in dens between February and July, nursing young may be present. Therefore, a qualified biologist will establish a 100 foot diameter buffer area around the den. No construction, grading, or staging or equipment will be conducted within the buffer area until the biologist has determined that the badgers have vacated the den.
- To avoid conflicts with nesting raptors, construction activities will not be allowed during to the nesting season (March to July), unless a County-approved, qualified biologist has surveyed the impact zone and determined that no nesting activities will be adversely impacted. At such time, if any evidence of nesting activities are found, the biologist will determine if any construction activities can occur during the nesting

period and to what extent. The results of the surveys will be immediately provided to the County Environmental Division, with recommendations for variable buffer zones, as needed, around individual nests.

3.6 CULTURAL RESOURCES

3.6.1 Resource Documents and Reports

1. *Cultural Resource Investigation of the Excelaron Oil Field, APN 085-271-004, Huasna Valley*, Parker & Associates, April 2007.
2. *Archaeological Survey Report for the State Route 166/Alamo Creek Road Project, San Luis Obispo County, California,* Far Western Anthropological Research Group, Inc., June 2009.
3. *Archaeological Mitigation Plan for the Excelaron Oil Field,* Parker and Associates, February 21, 2008.

3.6.2 Setting

A Phase 1 surface survey was conducted for the well pads and shipping site, which identified archaeological resources on the subject property. While no pre-historic resources were found, the remains of a historical structure (an oil field crew cabin constructed between 1880 and 1910) was encountered. This structure is more than 50 years old and has been identified as having historic significance.

An additional records search and surface survey was conducted for the proposed intersection improvements at Alamo Creek Road and Highway 166. No cultural resources were identified within the right-of-way proposed for improvements.

There is some potential for paleontological resources to be present in this type of geological formation. Pursuant to Section §22.10.040 of the County's Land Use Ordinance (Inland), the following measure is in place in order to help reduce impacts to archaeological resources during ground disturbance activities. In the event archaeological resources are unearthed or discovered during any construction activities, the following standards apply:

A. Construction activities will cease, and the Department will be notified so that the extent and location of discovered materials may be recorded by a qualified archaeologist, and disposition of artifacts may be accomplished in accordance with state and federal law.

B. In the event archaeological resources are found to include human remains, or in any other case when human remains are discovered during construction, the County Coroner will be notified in addition to the Department so proper disposition may be accomplished.

3.6.3 Impacts

The following represent the potential impacts to cultural resources.

1. The proposed project will disturb an approximate 2.2 acre area to make improvements to the project site (i.e., well pads, shipping site) and to the existing access roads.
2. The noted historic resource is located adjacent to the shipping site. The shipping site layout has been designed to avoid this historic resource.
3. Impacts to paleontological resources are considered to be less than significant based upon the following:
    a. The majority of the earthwork for the existing roads and pads is less than three (3) feet in depth; and
    b. A maximum of twelve (12) new drill holes, ranging from 5-inch to 36-inch diameters, are anticipated. This represents a relatively small amount of horizontal disturbance (i.e., less than 50 square feet).

3.6.4 Applicant Proposed Measures

The following measures, incorporated into the project description, will reduce impacts to cultural resources to less than significant levels.

- The historic site (oil crew cabin) will be delineated as an Environmentally Sensitive Area ("ESA") on all applicable project plans. The plan will also identify the placement of temporary orange construction fencing along the edge of this ESA where there is any potential for construction or operational activities to occur (e.g., vehicles, storage, etc.). During construction, the protection fencing will be kept in good working order. All workers will attend a preconstruction/tailgate environmental monitor meeting that discusses this protection fence and activities not allowed within the fenced area.
- Evidence that a qualified archaeologist (approved by the Environmental Coordinator), who will periodically monitor key earth disturbing activities will be provided. If any significant archaeological resources or human remains are found during monitoring, work will stop within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist and any other appropriate individuals. Any additional mitigation will be implemented, as required by the Environmental Coordinator. The archaeologist will prepare a "Mitigation and Monitoring Summary" report and submit to the county.

<u>Monitor</u>

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.7 GEOLOGY / SOILS

3.7.1 Resource Documents and Reports

1. *Geologic Hazard Report, Excelaron Conditional Use Permit, Huasna Valley, San Luis Obispo County, California,* Earth Systems Pacific, June 18, 2009.
2. *California Code of Regulations, Title 14, Division 2, Chapter 2*
3. *Porter Ranch Access Road/Twitchell Reservoir Report, Huasna Valley Oil Field,* Cannon, June 18, 2009.
4. *Mankins Access Road – Disturbance Area* Cannon, June 30, 2009. (Large size plan format).
5. *Correspondence to C.M. Florence, AICP Agent from James L. Beebe, PhD, D (ABMM), Director, Public Health Laboratory,* June 12, 2009.

3.7.2 Setting

The following conditions relating to soils and geology exist on or adjacent to the subject property:

- Topography ranges from gently to very steeply sloping;
- Drainage characteristic of the soil ranges from very poorly to well drained, with shrink-swell characteristics of the soil characterized as low;
- Soil erodibility ranges from low to moderate;
- The closest water body is approximately ½ mile to the east (Huasna Creek) with unnamed ephemeral tributaries located closer to the proposed project;
- Areas of the Porter Ranch are subject to periodic flooding due to its proximity to Twitchell Reservoir;
- No landslides were identified within the vicinity of the well pads or shipping site;
- The liquefaction potential during a ground-shaking event is considered low on the Mankins Ranch;
- On the Porter Ranch, segments of the existing roadway, where it trends close to the bank of the Huasna River, have high liquefaction potential; and
- The potential for seismically induced settlement is considered low.

The following active and non-active faults are located near the project site:

- Los Osos fault zone – Irish Hills segment lies approximately twenty (20) miles northwest of Mankins Ranch and twenty-two (22) miles from the central portion of Porter Ranch – **active**;
- West Huasna fault is located approximately 1.5 miles to the west of both the Mankins and Porter Ranch – **non-active**;
- San Andreas fault lies twenty-three (23) miles to the northeast – **active**;
- Hosgri-san Simeon fault system(s) lies approximately twenty-seven (27) miles west of the site – **active**; and
- East Huasna fault zone lies approximately five (5) miles east of the Mankins

Ranch and two (2) miles east of the southern end on the Porter Ranch road – **non-active**.

The project site is underlain by sandstone, silty shale, and in the Huasna River area, alluvium. No serpentinite or ultramafic rocks were identified on or near the project site. Radon in San Luis Obispo County is associated with areas underlain by bedrock of the Monterey formation. Thus, due to the fact that the project site is underlain by sandstone and silty shale of the Santa Margarita formation, the potential for radon gas is considered to be low.

3.7.3 Regulatory Framework

County of San Luis Obispo ("County")

In addition to the Uniform Building Code, the County has additional guidance documents for new development in areas with soil or geological challenges. These include the Safety Element, related Map of Liquefaction Hazards, and Land Use Ordinance. For projects over one (1) acre of disturbance, the Regional Water Quality Control Board requires that a Storm Water Pollution Prevention Plan be prepared to address surface water quality.

One goal from the County's Safety Element includes *"Minimiz[ing] the potential for loss of life and property resulting from geologic and seismic hazards."* The Element specifically outlines policies and standards that aim to achieve this goal.

The County's Land Use Ordinance ("LUO") includes provisions to address geological problem areas, drainage, and sedimentation/erosion control. In order to minimize sedimentation and erosion, the LOU requires the preparation of a "Sedimentation and Erosion Control Plan" to be incorporated into the project (LOU (Inland), Section §22.52.090; LOU (Coastal), Section §23.05.036). The plan is to be prepared by a registered civil engineer and address slope surface stabilization; temporary and final erosion/sedimentation control measures; and related devices.

California Department of Conservation, Division of Oil, Gas and Geothermal Resources

The California Department of Conservation, Division of Oil, Gas and Geothermal Resources ("CDOGGR") is responsible to ensure oil resources are protected and then removed efficiently and safely. The California Code of Regulations, Title 14, Division 2, Chapter 2 explains their responsibilities under CEQA. The CDOGGR requires, at a minimum, the following:

- Implementation of proper drilling procedures;
- Preparation of a spill contingency plan;
- Installation of well casing to prevent contamination to soil and aquifers between the oil reservoir (usually well below any potable aquifers) and surface soils;
- Implementation of proper methods and procedures when hot water injection and process water disposal is proposed;
- Implementation of blowout prevention methodologies;
- Implementation of procedures for the detection and abatement of subsidence; and
- Implementation of proper plugging and abandoning when well production is

terminated.

State & Regional Water Quality Control Board

The Clean Water Act has established a regulatory system for the management of storm water discharges from construction, industrial and municipal sources. The California State Water Resources Control Board (SWRCB) has adopted a National Pollutant Discharge Elimination System (NPDES) Storm Water General Permit that requires the implementation of a Storm Water Pollution Prevention Plan (SWPPP) for discharges regulated under the SWRCB program. Currently, construction sites of one acre and greater may need to prepare and implement a SWPPP which focuses on controlling storm water runoff. Municipal and industrial sources are also regulated under separate NPDES general permits. The Regional Water Quality Control Board and County are the local extensions of the SWRCB, who currently monitors these SWPPPs.

3.7.4 Impacts

The following represent the potential impacts to geologic and soils resources.

1. As proposed, the project will result in the disturbance of approximately 2.2 acres. *Note: All proposed areas of disturbance are within areas previously disturbed as a part of historic exploration programs dating as far back as the 1930's.*
2. To prepare the well pad, shipping site and roadways, approximately 71,850 cubic yards of cut (46,370 cu. yd.) and fill (25,480 cu. yd.) will be required.
3. Cut and fill slopes supporting the well pads, shipping site, and roadway have the potential for slope instability. There is the potential for erosion and sedimentation related to these grading activities.
4. Potential impacts related to subsidence and liquefaction are limited to portions of the Porter Ranch roadway.
5. Portions of the Porter Ranch roadway are subject to flooding.

3.7.5 Applicant Proposed Measures

The following measures, incorporated into the project description, will reduce geology/soils impacts to less than significant levels.

- A geotechnical engineering report (prepared and certified by a State of California licensed geotechnical engineer and/or geologist) that addresses slope stability, landslides, liquefaction, settlement, seismic hazards, and expansive soils at the area of proposed facilities will be provided to the County. The geotechnical engineer or geologist will also take baseline measurements that can be used to compare with future measurements in order to determine if any subsidence has resulted from the proposed extraction/reinjection process. The recommendations contained in the geotechnical engineer's report will be implemented in the preparation of grading plans and during construction. The geotechnical engineer or geologist will verify these measures were adhered to and submit their

assessment.

- Applicable construction plans will show that construction activities will be limited to the dry season (April 15 through October 15). If construction activities cannot take place during the dry season, a temporary sedimentation and erosion control plan will be prepared by a qualified individual. A qualified biologist or county monitor, will determine if the proposed erosion and sedimentation control measures are adequate to protect down-gradient wetland and riparian resources, or if additional measures are required. All proposed mitigation measures will be incorporated.
- All disturbed areas will be restored as soon as possible. A compatible native seed mix will be used to revegetate the areas to be restored (see following mix(es)). The same revegetation treatment will apply for any areas to be left undisturbed for more than 30 days. Applicable construction plans will show seed mix or biologist-recommended mix.
- Permanent rumble strips or other erosion control tracking devices will be permanently installed and maintained on both the project access road, and the Porter Ranch access road to clean the tires of all vehicles prior to entering Huasna Townsite Road public right-of-way.
- To further reduce sediment into Huasna River, especially during the rainy season, the following sections of the southern access road will be paved: between the Huasna River bridge and the end of Huasna Townsite Road; the first 100 feet south of the Huasna River bridge. This will be kept in good working order during the duration of the project.
- A portion of the access road located between Huasna Townsite Road and the project site is partially located within a Flood Hazard Area. Access road improvements will require Drainage and Flood Hazard Review by the Department of Public Works, and any necessary improvements will be installed. Any additional permits required from other agencies to allow for road improvement or bridge related impacts near the existing creek will be obtained.
- Applicable construction plans will show how all grading will be done in accordance with Appendix 33 of the Uniform Building Code.
- The project will enrolled for a Statewide Storm Water Permit for Construction Activities with the Regional Water Quality Control Board (see http://www.waterboards.ca.gov/water _issues/programs/stormwater/construction.shtml). Evidence that the county that RWQCB has received the application will be submitted. If a SWPPP is required, all elements will be incorporated into applicable construction plans.
- The project will comply with the requirements of the National Pollutant Discharge Elimination System Phase I and/or Phase II storm water program and the County's Storm Water Pollution Control and Discharge Ordinance. Best management practices will be incorporated onto all applicable construction plans.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.8 HAZARDS & HAZARDOUS MATERIALS

3.8.1 Setting

Oil production facilities commonly use and/or store potentially hazardous materials including crude oil, natural gas, propane, diesel, and various other chemically-based substances (e.g.) corrosion inhibitors, solvents, lubricants, and coolants. The following items relate to hazards and hazardous materials in relationship to the proposed project.

- The project *is* within a high severity risk area for fire;
- The project is *not* within the Airport Review area or within the regulated area of an adopted airport land use plan;
- The project is *not* expected to conflict with any regional evacuation plan;
- The proposed project is *not* within one-quarter mile of an existing or proposed school;
- The project site is *not* included on the Cortese list of hazardous materials sites; and,
- The previous exploration project did *not* remove all of the equipment and stored material used as part of the testing operation.

Impacts and mitigation measures of hazardous substances relating specifically to air emissions and hydrology are discussed further in sections 2.4 and 2.9, respectively. It should be noted that this project does *not* propose an on-site fuel station or the use of any diluents.

3.8.2 Regulatory Framework

Federal Laws/Regulations

Federal Water Pollution Control Act of 1972 ("Clean Water Act"). The Clean Water Act governs the control of water pollution in the United States. This Act includes the National Pollutant Discharge Elimination System ("NPDES") program, which requires that permits be obtained for point discharges of wastewater. This Act also requires that storm water discharges be permitted, monitored, and controlled for public and private entities.

Resource Control and Recovery Act of 1974 ("RCRA"). RCRA was enacted as the first step in the regulation of the potential health and environmental problems associated with solid hazardous and non-hazardous waste disposal. RCRA, and the formation of the U.S. EPA to implement the RCRA, provide the framework for national hazardous waste management, including tracking hazardous wastes from point of origin to ultimate disposal.

Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"). Under CERCLA, owners and operators of real estate where there is

hazardous substances contamination may be held strictly liable for the costs of cleaning up contamination found on their property. No evidence linking the owner/operator with the placement of the hazardous substances on the property is required. CERCLA, also known as Superfund, established a fund for the assessment and remediation of the worst hazardous waste sites in the nation. Exceptions are provided for crude oil wastes that are not subject to CERCLA.

Hazardous and Solid Waste Amendments of 1984 ("HSWA"). The HSWA law was enacted to close RCRA loopholes and regulated leaking underground storage tanks (USTs). The SWRCB, the RWQCB, and the local County Division of Environmental Health, as a Certified Unified Program Agency (CUPA) program, oversee UST regulations and cleanup of leaking USTs.

Asbestos Hazard Emergency Response Act of 1986 ("AHERA"). The AHERA is the federal legislation that governs the management and abatement of asbestos-containing materials in buildings.

National Emission Standards for Hazardous Air Pollutants; Asbestos, 40 CFR Part 61. This regulation requires the assessment and proper removal of asbestos-containing materials that could release asbestos when disturbed prior to the demolition of buildings.

Clean Air Act. The regulatory programs that govern stationary sources of air pollution apply to any facility that emits or has the potential to emit conventional pollutants: oxides of nitrogen and sulfur, carbon monoxide, VOCs or particulate matter. It may also apply to emission sources of certain toxic chemicals. In addition to the existing air district permitting programs required by state law and district rules, a new federal operating permit program must be implemented to meet EPA regulations adopted pursuant to Title V of the 1990 amendments of the Clean Air Act. Locally the Clean Air Act regulations are implemented and enforced by the San Luis Obispo APCD.

California Laws/Regulations

Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code). The Porter-Cologne Act established a regulatory program to protect water quality and protect beneficial uses of the state's waters. The Porter-Cologne Act also established the State Water Resources Control Board and nine regional boards as the main state agencies responsible for water quality in the state. Discharges of wastes (including spills, leaks, or historical disposal sites) where they may impact the waters of the state are prohibited under the Porter-Cologne Act, including the discharge of hazardous wastes and petroleum products. The assessment and remediation of these waters are regulated by the regional boards, the RWQCB administers such waters in the vicinity of the proposed project.

Title 22, California Code of Regulations. Title 22 of the CCR regulates the use and disposal of hazardous substances in California. It contains regulatory thresholds for hazardous wastes which are more restrictive than the federal hazardous waste regulations. The California Department of Conservation, Division of Oil Gas and Geothermal Resources ("CDOGGR") has the responsibility to implement the California Code of Regulations, under Title 14, Division 2, Chapter 2, which explains their responsibilities

under CEQA.

California Health and Safety Code Sections 25500 et seq. The California community right-to-know hazardous material law applies to any facility that handles any hazardous material (e.g., chemical, chemical-containing products, hazardous wastes, etc.) in a quantity that exceeds reporting thresholds. The most common thresholds that trigger regulation based on that state statute are 500 pounds of solid, 55 gallons of liquid, and 200 cubic feet of compressed gas, based on the presence of individual chemicals. The basic requirements of hazardous materials and community right-to-know regulations for covered facilities include:

- Determining whether the facility handles hazardous materials;
- Immediate reporting of releases of hazardous materials;
- Submission and update of a Hazardous Materials Business Plan (including an accurate chemical inventory, site map showing hazardous materials storage locations, emergency response plan, and notification procedures) as required by the local administering agency;
- Notification of the local administering agency of the handling of specified quantities of acute hazardous materials and submission of a Risk Management Plan ("RMP") as required;
- Annual submission for manufacturing facilities of a Toxic Chemical Release Report (Form R) if threshold amounts of certain toxic chemicals are made, or processed for use; and,
- Requirements for hazardous materials storage imposed by local administering agencies, fire departments, and California Occupational Safety and Health Administration (Cal/OSHA) standards.

California Air Resources Board - Air Toxics Control Measure. Under the California Air Resources Board Air Toxics Control Measure ("ATCM") for Construction, Grading, Quarrying, and Surface Mining Operations, prior to construction permit issuance, a geologic evaluation is required to determine the presence or absence of naturally-occurring asbestos. If naturally occurring asbestos is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM before grading may begin. These requirements may include, but are not limited to, 1) preparation of an "Asbestos Dust Mitigation Plan," which must be approved by APCD before grading begins; and 2) an "Asbestos Health and Safety Program", as determined necessary by APCD.

California Fire Code. The 2001 California Fire Code has been adopted by CalFire/County Fire, which is the fire agency with jurisdiction over the project site. The California Fire Code contains minimum standards for many aspects of fire prevention and suppression activities. These standards include provisions for access, water supply, fire protection systems and fire resistant building materials. The California Fire Code also includes provisions for required setbacks for oil wells from buildings, storage tanks, and streets and railways.

<u>County of San Luis Obispo Regulations</u>

Energy Element. In 1995, the County of San Luis Obispo adopted the Energy Element as

part of the County's General Plan. The Energy Element contains a goal of protecting public health, safety and environment, and several policies that promote the stated goal. Applicable policies are summarized below:

- Policy 56. Encourage existing and proposed facilities to focus on measures and procedures that prevent oil, gas, and other toxic releases into the environment. This policy is to ensure that facilities: (1) take measures to prevent releases and spills, (2) prepare for responding to a spill or release, and 3) provide for the protection of sensitive resources. A review of a facilities spill response plan, or reports from other agencies, should be completed to monitor compliance.
- Policy 64. Guideline 64.1. To reduce the possibility of injury to the public, facility employees, or the environment, the applicant will submit an emergency response plan which details response procedures for incidents that may affect human health and safety or the environment. The plan will be based on the results of the comprehensive risk analysis. In the case of a facility modification, the existing response plan will be evaluated by the safety review committee and revisions made as recommended.

Flammable and Combustible Liquid Storage. County LUO section §22.10.070 includes requirements on flammable and combustible liquid storage relating to: applicability, permit requirements, limitation on use, limitation on quantity, setbacks, additional standards within the URL or VRL, and including CalFire recommendations, as applicable. Without approval through a Conditional Use Permit, above ground storage of combustible liquid is 20,000 gallons and 2,000 gallons for flammable liquids.

The following agencies have various levels of oversight or responsibilities relating to hazardous wastes and materials.

The California Department of Forestry and Fire Protection/San Luis Obispo County Fire Department (CalFire), provides fire protection, emergency medical, and rescue services to the proposed project. CalFire previously reviewed the project for potential fire risks and offered methodologies to reduce these impacts (e.g., require adequate setbacks and surrounding vegetation removal/modifications to minimize potential for wildland fires; fire water storage; etc.).

Appropriate response times for fire protection services vary with the degree of urbanization. Appropriate response times for urban areas are up to six (6) minutes, for suburban areas up to seven (7) minutes, and rural areas up to twelve (12) minutes. Response times exceeding 15 minutes for structure fires provide little possibility of saving the structure, and 60 minutes or more could mean fires approaching critical levels in steep, chaparral covered, remote areas. For structure fires, CalFire has mutual aid agreements with all fire protection agencies in the County, including the City of Arroyo Grande. Their station is approximately eight (8) miles closer than the Nipomo Station. An air tanker squadron at Paso Robles Airport is also available if needed (CalFire 2003).

San Luis Obispo County Environmental Health Department The Environmental Health Department reviews and insures compliance with the following documents:

- Spill Prevention Countermeasure Control Plan ("SPCC") for above ground petroleum storage (including produced water).
- Hazardous Materials Business Plan.
- Hazardous Waste Management Plan.

Regional Water Quality Control Board ("RWQCB")

The RWQCB protects groundwater and surface waters. See discussion under the Hydrology / Water Quality in section 2.9 of this document.

Air Pollution Control District ("APCD")

The APCD oversight includes minimizing the release of hazardous wastes/materials and the potential for them to become airborne. See discussion under the Air Quality in section 2.3 of this document.

Division of Oil, Gas and Geothermal Resources ("CDOGGR")

The CDOGGR has responsibility to ensure that oil resources are protected and removed efficiently and safely. CDOGGR has oversight regarding the following aspects:

- Requires the applicant to complete and execute a Spill Contingency Plan;
- Insures proper well casing to avoid contamination of soil and aquifers between the oil reservoir (usually well below any potable aquifers) and the surface of the soil;
- Requires proper plugging and abandoning when well production is terminated;
- When proposed, verifies any re-injection (e.g., water) is using proper methods;
- Verifies any new drilling is using proper methods;
- Reviews project to include blowout prevention methodologies;
- Reviews project for subsidence detection and abatement; and,
- Includes provisions on proper transport of fluids during testing period.

Department of Toxic Substance Control ("DTSC")

The DTSC provides oversight for existing soil contamination and hazardous materials/waste spills

California Department of Fish & Game ("CDFG") CDFG reviews projects to determine adverse impacts to species connected with downstream surface waters and other sensitive vegetation and wildlife.

3.8.3 Impacts

The project, as proposed, may use hazardous materials and may generate small amounts of hazardous wastes. Therefore, the following represent the potential impacts related to hazard and hazardous materials.

1. There is a small risk of explosion or oil release from the project. The potential for leakage from tanks and pipelines could occur without continual inspections and maintenance.
2. The formation from which the oil will be extracted may generate natural gas.

3. The use of propane as a fuel source and the potential for natural gas production from the oil wells may create air emissions impacts.
4. Petroleum hydrocarbon-containing soil may be encountered during project construction activities due to previous oil exploration projects.
5. Operation of the proposed production facilities may include the use of common oil processing hazardous-containing chemicals.
6. There is a potential for increased fire risk as the project is located within a "very high" fire risk area (i.e., susceptibility to wildland fires). Fire hazard severity is determined by a number of factors including but not limited to: remoteness of the area, denseness of vegetation, the area's circulation network, proximity to fire fighting facilities, habitat type, and the degree of urbanization.
7. CalFire's response time, based upon their Response Time Map, shows that it would take more than twenty - thirty (20 - 30) minutes to reach the project site from the closest fire station. The closest fire station is located twenty-three (23) miles away in Nipomo, CA.

3.8.4 Applicant Proposed Measures

The following measures, incorporated into the project description, will reduce hazards and hazardous material impacts to less than significant levels. In general, the focus of these measures is to recognize the numerous agencies involved with the regulation of hazardous materials and wastes relating to the proposed project and to provide measures to insure compliance.

- The following will be added as notes on all applicable construction plans regarding oilfield wastes/refuse, and will be followed during the life of the project:
    - Oilfield wastes, including but not limited to oil, water, chemicals, mud, and cement, will be disposed of according to all applicable County, State and Federal laws, regulations, ordinances, etc. and in such a manner as not to cause damage to life, health, property, freshwater aquifers or surface waters, or natural resources, or be a menace to public safety. Disposal sites for oilfield wastes will also conform to regulations from the following: State Water Resources Control Board, California Regional Water Quality Control Board, County Department of Public Health (Environmental Health Division), State Department of Toxic Substances Control.
    - Dumping harmful chemicals where subsequent surface waters might wash significant quantities into freshwaters will be prohibited. Drilling mud will not be permanently disposed of into open pits. Cement slurry or dry cement will not be disposed of on the surface and will be removed to approved facilities.
    - Unused equipment and scrap associated with oilfield operations will be properly removed from a production or injection operations area and/or stored in such a manner as to not cause damage to life, health, or property, health, or

become a public nuisance or a menace to public safety. Trash and other non-toxic waste materials related to oilfield operations will be removed and disposed of properly (Cold Canyon Landfill).

- The following well site and lease restoration notes will be added on all applicable construction plans, and will be followed during the life of the project:
    - In conjunction with well plugging and abandonment operations, any auxiliary holes, such as rat holes, will be filled with earth and compacted properly; all construction materials, cellars, production pads, and piers will be removed and the resulting excavations filled with earth and compacted properly to prevent settling; well locations will be graded and cleared of equipment, trash, or other waste materials, and returned to as near a natural state as practicable. Well site restoration must be completed within sixty (60) days following plugging and abandonment of the well.
    - Unstable slope conditions created during site preparation will be mitigated in such a manner as to prevent slope collapse.
    - Access roads to well locations will not be subject to restoration requirements; however, any condition that creates a hazard to public safety or property or causes interference with natural drainage will be restored or rectified prior to approval of final well abandonment.
    - Prior to the plugging and abandonment of the last well or group of wells on a lease or other similar property-use agreement, a plan and schedule will be submitted for completing lease restoration. The lease-restoration plan will also include the locations of any existing or previously removed, where known, tanks, pipelines, and facility settings. Lease restoration must begin within three (3) months and be completed within one (1) year after the plugging and abandonment of the last well(s) on the lease, unless an alternative schedule is approved by the County.
    - Lease restoration will include the removal of all tanks, above-ground pipelines, buried pipelines, debris, and all other related facilities and equipment. A permit must be obtained from County Department of Public Health (Environmental Health Division). Toxic or hazardous materials will be removed and disposed of in accordance with State Department of Toxic Substances Control, and County Department of Public Health (Environmental Health Division) requirements. The County will consult with the property owners prior to release of any financial bonds relating to restoration work.
- If the owner of the mineral estate of the property fails to pay for the costs of an abatement or compliance action or any other above described fees upon demand by the County, the Board of Supervisors by resolution may order the cost of the abatement or unpaid fees to be specially assessed against the mineral estate parcel. Such assessment will be collected at the same time and in the same manner as ordinary county taxes are collected and will be subject to the same penalties and the same procedure and sale in case of the delinquency as are provided for ordinary

county taxes.

- To the extent that the ownership of the surface estate is the same as or similar to (that is, any common owner) the ownership of the mineral estate of the property involved in such abatement or compliance action, or if the mineral and surface estates (property owners) are not separate, the enforcement fee or other unpaid fees may be assessed, collected and attached to the surface estate in the same manner as the mineral estate. Such assessment will be collected at the same time and in the same manner as ordinary property taxes are collected and will be subject to the same penalties and the same procedure and sale in case of the delinquency as are provided for ordinary property taxes.
- The assessment of, and tax lien upon an owner for the enforcement fee or other unpaid fees will not absolve an operator, other owners or other responsible parties of joint liability to pay any assessed enforcement fee.
- The following notices will be submitted to the County (Planning Department) in writing, prior to commencement of said operation:
    - Change of idle well status to producing or injection status;
    - Intention to engage in secondary recovery operations;
    - CDOGGR notice of intent to drill new well;
    - CDOGGR permit to conduct new well drilling operations;
    - CDOGGR final summary of operations and history report on new well completion;
    - Intention to install, remove, re-start, or replace permanent production facilities (i.e., piping, vessels, tanks, and equipment) that have been idle for more than five (5) years;
    - CDOGGR notice of intent to plug and abandon well;
    - CDOGGR permit to conduct plugging and abandonment operations;
    - CDOGGR report of well abandonment and history report on abandonment operations;
    - The County will be notified within ten (10) days of the transaction closing date of any well, property, or equipment appurtenant thereto, whether by purchase, transfer, assignment, conveyance, exchange or otherwise. The notice will contain the following:
        - The names and addresses of the person from whom and to whom the well(s) and property changed;
        - The name and location of the well(s) and property;
        - The date of acquisition;
        - The date possession changed;
        - A description of the properties and equipment transferred; and
        - The new operator's agent or person designated for service of notice and his address.
    - The County will be notified in writing, of the suspension of any drilling operations, greater than five (5) days, and upon the resumption of operations

giving the date thereof;
    - Notification of reportable oil and/or gas releases will be given to the State Office of Emergency Services, California State Warning Center (800) 852-7550 and the County immediately upon release. Additionally, a copy of the community awareness and emergency response (CAER) form will be submitted within twenty-four hours; and,
    - The County will be notified of the following operations in advance, but need not be in writing, when:
        - Drilling operations start;
        - Plugging at base of fresh water and at the surface.

- The County will have a copy of the project's spill prevention, control and countermeasure plan(s) ("SPCC plan") on file. This plan is required by the United States Environmental Protection Agency (USEPA) and will be approved by the County's Environmental Health Division. In the event that the operation is exempt from the requirement to develop an SPCC plan, or the plan does not cover all of the leases in San Luis Obispo County, a Pollution Control Plan (PCP) will be developed. Said SPCC/PCP will meet the requirements of county, state, and federal authorities. The SPCC plan will be subject to review by the County (Environmental Health). PCP plans will be subject to review and approval by the County. The PCP will describe how the operator will control spillage from the operator's facilities in the county.
- An agent who is a resident of the state upon whom all orders and notices provided may be served in person, or by registered or certified mail, will be designated. The County will be notified within ten (10) days, in writing, if there are any changes in such agent or such mailing address, unless operations within the County are discontinued. Service by registered or certified mail, or in person, to the agent so designated, will constitute service for all purposes of this measure.
- Applicable construction plans will show all drilling wells, and wells being worked over will be equipped with adequate blowout equipment. The controls of which must be located outside of the sub-base of the drilling rig, or such greater distance as may be specified by the construction manager for special circumstances, and must be capable of closing off the well with pipe in or out of the hole. CDOGGR Publication MO7 or as amended specifications will be a minimum guideline. These measures will be installed and kept in good working order for the life of the project.
- Cementing operations will be in accordance with current CDOGGR requirements.
- Applicable construction plans will show that containment facilities (including walls and berms) will be designed and constructed to: be impervious, prevent the escape of fluids from the immediate storage area, and be of sufficient size to contain one and one-half (1 ½) times the capacity of the largest tank. These measures will be installed and kept in good working order for the life of the project.
- Construction plans will show petroleum storage tanks that are designed in accordance with all applicable laws and regulations. These tanks will be installed and maintained

per the approved plans.

- Construction plans will show new storage facility tank locations installing an impervious liner (not less than forty mil), or equivalent, to prevent seepage. These measures will be installed and kept in good working order for the life of the project. This requirement may be modified at the discretion of the County.
- All waste substances (such as drilling muds, oil brine, or acids produced or used in connection with oil drilling operations, or oil production) will be retained in watertight receptors, from which they can be hauled for terminal disposal in a dumping area specifically approved for such disposal by the RWQCB, and any other controlling agency.
- Construction plans will show all piping systems to be designed in accordance with all applicable laws and regulations. These piping systems will be installed and maintained per the approved plans.
- During construction/ground disturbing activities, and for the life of the project, if the pipeline systems are found to be unreliable or deficient, the repair or replacement of the pipeline section or system, repairs or replacement will be completed immediately to remedy the situation. Initial testing and inspections will be completed prior to the initial use of the pipeline, and thereafter on a regular ongoing basis. The testing is to establish the reliability of all pipeline systems including those not specifically regulated by state or federal authority (including testing, treating, and storage facilities), as well as to determine what measures are needed to keep them in good working order, which includes no leaks. All repairs will be made. Pipelines that are replaced will be removed under direction of the County Department of Public Health (Environmental Health Division).
- Well Abandonment. Prior to starting the plugging and abandonment of any well, the County will be provided with a copy of the CDOGGR permits to conduct abandonment operations and the anticipated date the plugging and abandonment operations are to commence. Any substantial changes in procedure or schedule will also be provided to the County. Additionally, the following will be added as notes on all applicable construction plans, and will be followed during the life of the project:
    - The subsurface plugging and abandonment of the well will be completed in accordance with current CDOGGR regulations. The County will be provided with the CDOGGR notice to verify compliance with all CDOGGR requirements.
    - All drilling, production and appurtenant equipment, including pipelines, designated for the exclusive use of the subject well will be removed. Existing pipelines and equipment designated for current operations may be left in place. The County may be petitioned to leave equipment and pipelines, designated for future use, in place.
    - The well casing will be cut off at least five (5) feet below the ground level. Nothing will be placed in the excavation above the point of cutoff until the

cutoff has been inspected by the County.

- The surface cement plug depth will conform to the requirements of the CDOGGR.
- A steel cap of not less than the same thickness as the well casing will be welded to the casing. The steel cap will be located via GPS and the well number and API number will be welded on the top of the casing.
- All Cellars and Surface Concrete Structures will be removed. Tie downs will be removed to a minimum of six (6) feet below ground surface. Soil below the cellars will be tested for hydrocarbon contamination. If contamination is found to be present the area will be remediated. All excavations and depressions will be filled with clean soil. All oil, waste oil, refuse and waste material will be removed from the drill site pursuant to all applicable laws and regulations.

- The following items will be added as notes on all applicable construction plans as a part of the lease area restoration, and will be followed during the life of the project:
  - Prior to the abandonment of the last well on a lease, a plan will be filed with the County, for approval, to restore the lease to a condition in conformance with state, County, and local ordinances.
    - Partial lease restoration/remediation activities may be conducted at any time. The record of any partial lease restoration will be kept on file by the County as part of the final restoration package.
    - Facilities idle for over fifteen (15) years that have no reasonable potential of future use and:
      i. Are a potential threat to public health; or
      ii. Are a potential threat to the environment; or
      iii. At the request of the surface owner will be removed in a timely manner. For the purposes of this paragraph, a lack of reasonable potential of future use may be indicated by the cancellation of APCD permits, a continuous lack of maintenance around the facility, or similar indications as determined by the County of de facto abandonment. Upon request, the County will be provided with a list of all facilities that have been idle for over ten (10) years. To retain such facilities after the fifteen (15) year limitation, a letter justifying why said facility is of value and should not be removed will be submitted to the County for approval.

- The following items will be added as notes on all applicable construction plans as a part of the final equipment removal process, and will be followed during the life of the project:
  - Tank batteries, production islands, gas treating/compression areas, all appurtenant equipment areas, pipelines and foundations will be removed. An investigation will be conducted to determine if soil contamination is present.

If soil contamination is found, the area will be remediated per the plan approved by County Department of Public Health (Environmental Health Division).

- All flow lines, gathering lines and other lease pipelines will be flushed with water and removed, unless due to location the removal will cause more environmental damage than the potential benefit by its removal. The soil will be sampled before pipe removal along the lines as follows: at all pipe joints and significant visible cracking or corrosion areas, unless greater frequency specified in other approved plans.
- All buildings will be removed from the lease. Buildings and areas used for storage and/or testing will have an investigation to determine if soil contamination exists. If soil contamination is found the impacted area will be remediated per an approved plan.
- An investigation will be conducted in locations of historic pits and known soil contamination. If soil impacts are identified, the areas will be remediated per the approved plan. The original soil contamination locations will be determined by GPS coordinates and will be permanently kept on file by the County.
- Roads and well sites will be removed and the areas re-contoured to as close to natural slope as reasonable, as required.
- Upon completion of full site restoration the County will provide a letter of closure.
- Any of the above conditions may be waived by the County for appropriate purposes such as, but not limited to, requests to leave in place:
    - Roads and well site pads;
    - Pipelines;
    - Concrete pads; and
    - Buildings.

- The County will be furnished with sufficient evidence to verify compliance with all state requirements.
- Construction plans will include notes that drilling operations in any well will be diligently implemented until the well is completed or abandoned. All drilling equipment and the derrick will be removed from the drill site and leased premises within sixty (60) days following the completion or abandonment of any well, unless permitted to be temporarily stored on the drill site by written authority of the County after the derrick has been lowered. Service equipment for existing wells will likewise be removed within sixty (60) days of completion of the rework, unless otherwise permitted by the County.
- The County, or its designee, in the performance of the duties herein prescribed, will have the authority to enter upon and into any and all premises under its jurisdiction at all reasonable hours for the purpose of inspecting the same to determine whether or not the provisions of this permit and of all other applicable laws or ordinances are observed therein; provided that a reasonable effort will be made to request entry and explain the reason for entering.

Notwithstanding the foregoing, if the County has reasonable cause to believe that there exists any condition on the property unsafe or dangerous which may require immediate inspection to safeguard the public safety, the County will have the right to immediately enter and inspect such property and may use any reasonable means required to effect such entry and make such inspection. The County will be will be permitted to enter, and held harmless and indemnified from any liability in connection with lawful entry hereunder.

If there are any locked gates, a key or combination will be made available to the County for emergency purposes. Such key or combination is for this specific purpose only, and any other use will be a misdemeanor.

- Public agency inspections will be performed as discussed in other measures of this project. Any noncompliance items noted during an inspection will be brought to attention for corrective action. Failure to correct noncompliance items will be a violation of the provisions of this permit, and thereby constitutes grounds for revoking this permit to continue operation.
- In the event that the County staff determines, at any time, that any operations covered under this permit constitute an imminent threat to public health, safety or the environment, he/she will have the right to require appropriate action be taken, within a time frame identified by the County, to mitigate the situation. If an Excelaron representative is unavailable, the County may take the necessary steps to mitigate the immediate threat and stabilize the situation, until such time as an Excelaron representative can respond. The County will be reimbursed for all reasonable costs associated with the mitigation activities.
- In the event that substantial damage to the environment and/or public health results from the project, remediation of such damage will be carried out within a reasonable period of time. If, in the judgment of the County, such remediation activities are not initiated within a reasonable period of time, the County may issue a notice of intent to initiate remediation and that an Excelaron representative will be responsible for funding. The County will issue said notice at least thirty (30) days prior to commencement of remedial activities. The response may include: (1) initiating remedial activities within the thirty day (30) period, or (2) filing an appeal. In the absence of one (1) of these actions the County may order the remediation.
- Construction plans will include notes that equipment and appurtenances hazardous to life or limb will be attended twenty-four hours a day, or enclosed, in all inhabited places or public use areas where there is reasonable likelihood of potential danger to life and limb. Such enclosure, where such danger to humans exists, will provide adequate fencing protection.
- **C**onstruction plans will include notes that any discharge of oil or wastes to surface or subsurface waters or land, by oil field operations, will not be allowed except when authorized by permit, ordinance or law. Oil spills or wastes will be kept to a minimum and will be prevented from entering stream courses or adjacent property by

the construction of dams, levees, ditches or other structures consistent with requirements of county, state and federal authorities. Evidence will be provided that a fully compliant Hazardous Material Business Plan and Hazardous Waste Management Plan have been prepared and subsequently approved by the County's Environmental Health Division. At a minimum, the Hazardous Waste Management Plan will address:

  - Waste determination (22 CCR §66262.11);
  - On-site container/tank management (22 CCR §66265.171 - .191);
  - Proper disposal (22 CCR §66266.3, HSC §25250.4);
  - Accumulation times (22 CCR §66262.34); and
  - Contingency plans (22 CCR §66265.50).

- The following notes regarding the transportation of oilfield wastes will be added on all applicable construction plans, and will be followed during the life of the project:
  - Oil field wastes determined to be hazardous materials, as defined by the State of California, and that are to be transported offsite, will be handled and disposed of at an approved hazardous materials disposal location or remediated to a non-hazardous level with the appropriate approvals. Such hazardous waste materials transported offsite will have manifests documenting the disposition of the material. The transporter of the hazardous waste material will have all state, county, and local licenses and approvals to haul the material and will be responsible for delivery of the wastes to the disposal location.
  - Non-hazardous oilfield wastes will be disposed of in an appropriate method for the material with the appropriate approvals by County Department of Public Health (Environmental Health Division), Regional Water Quality Control Board, Cal-EPA, etc., for the safe handling and transportation.
  - Materials transported between locations on the same lease will be transported in a manner that minimizes spills of oil, produced water and hazardous materials.
- Construction plans will show that each cellar will be constructed in accordance with generally accepted safe oil field practice. Except as may be occasionally necessary, during drilling and servicing operations, such cellars will not exceed a liquid depth of fifty percent of the depth of the cellar. The oil/petroleum depth may not exceed two (2) inches and be kept free from water, petroleum, drilling fluids or other substances which might constitute a hazard. Cellars will be covered any time they are unattended, sufficiently to prevent people, animals or items from falling inside.
- Construction plans will include notes or show that each formal point of public entry will have signage indicating operator name, contact information and site address or lease name. Each well and each tank setting will have a sign or other designation, clearly legible from a distance of twenty-five (25) feet, which contains the current operator's name, the lease name and well number. In the event there are more than two (2) wells on one drill site, it will be sufficient if the entrance to said drill site is

posted with a sign bearing the name of the operator and the name of the lease, together with a plainly visible sign on each producing well designating the particular number thereof, all clearly legible from a distance of twenty-five feet (25). These measures will be installed and kept in good working order for the life of the project by the applicant.

- The required Mitigation Monitoring Plan ("MMP") will include, at a minimum, a County annual inspection that compares environmental conditions of approval with the following project components: each lease site, each tank site, each producing well site, any idle well sites and lease tank site, (including headers and associated pipelines), and access roads for the purpose of ascertaining conformity with the county conditions of approval. Additional inspections, as needed, would be included in the MMP.

  A County trust account will be established to insure adequate funds are available for regular environmental monitoring inspections, as well as for any well/facility abandonment, soil remediation work or enforcement activities.

- The state has adopted provisions of law in the California Public Resources Code and other codes, the basic purposes of which are to conserve and protect natural petroleum and other hydrocarbon resources and fresh water sources and to protect the environment. Accordingly, where there is conflict with state regulations or laws, such state regulations or laws will prevail over any conflicting measures for this permit or contradictory prohibitions or requirements made pursuant thereto.

- Evidence will be provided to the Planning and Building Department that the County Environmental Health Division has received and approved a Phase I Environmental Site Assessment study that will determine environmental liabilities and impacts arising from the development and operation of this facility.

- An evaluation will be provided to the County to determine if the facility requires a Large Quantity Generator permit from the State Department of Toxics Substances Control (DTSC), as per 22 CCR §66270.1 - §66270.73. If yes, further evidence will be provided to the County that an application has been received by DTSC.

- The following information (regarding items left from the previous oil testing operation) will be provided to, and approved by, the County Environmental Health Division**:**

  - Determine the contents, if any, of all existing above ground storage tanks ("AGT's") in the project area;
  - Present a plan for the reuse or dismantling of AGTs;
  - Identify how AGT contents will be properly recycled or dispose of, if applicable;
  - Assess and properly recycle all drums from the project area;
  - A work plan to assess and mitigate all evident spills.

- The County may modify any of the above Hazardous Waste/Materials conditions upon demonstration of good cause that the intent of the above conditions has been

met.

- Obtain approval from County Department of Public Health (Environmental Health Division) for an SPCC Plan for the site, which includes spill mitigation, for all Above Ground Storage Tanks storing petroleum oils, products etc. The SPCC is required to be prepared by a Registered Professional Engineer ("RPE").
- All metal structures (e.g., storage tanks, well pumps, etc.) containing flammable, explosive or hazardous wastes or materials will be properly grounded for lightning strikes.
- All above-ground piping for produced water will be shown to be fully insulated to avoid pipes from reaching "below freezing" temperatures (i.e., at or below 10 degrees Fahrenheit) for extended periods. This insulation will be kept in good working order during the life of the project.
- The designated haul route will be the only route used for construction vehicles and operational tanker trucks and transport of any hazardous wastes. All project related vehicles, (i.e., construction vehicles and operational tanker trucks) may use the southern ranch access road crossing into Huasna River tributaries, as long as there is no running surface water within these tributaries. The ranch road must also be in good working order. Should there be running water, all such vehicles will turn around and return to their point of origin. All other water crossings are on county or state maintained bridges. If surface water is present for these crossings, tanker trucks will not pass, and the oil extraction will temporarily cease until there is no surface water running in the creek and the access road is in good working order. A spill contingency plan is required which will address potential vehicle spills along the haul route. Any clean up work necessary will be paid for should there be a spill.
- No diluents will be used during the life of the project.
- No hydraulic fracturing methodologies will be used during the life of the project.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.9 HYDROLOGY / WATER QUALITY

3.9.1 Resource Documents and Reports

1. *Water Resources Studies for the Proposed Huasna Oil Field Project, Huasna Valley,* Cleath –Harris Geologists, Inc., July 2009.
2. *Porter Ranch Access Road/Twitchell Reservoir Report, Huasna Valley Oil Field,* Cannon, July 6, 2009.

3.9.2 Setting

Groundwater Basin. The San Luis Obispo County Public Works Department "Water Years 2001-02 and 2002-03 Hydrologic Report" (Final Report May 16, 2005) states that the Huasna Valley Groundwater Basin has a surface area of 4,700 acres (7.3 square miles) and underlies valleys drained by two branches of Huasna Creek in southern San Luis Obispo County. Groundwater can be found primarily within sandstone beds, but also within fractured siliceous or calcareous shales. These sandstone units are located within the Phoenix and Saucelito members of the Santa Margarita Formation. These units occur in the synclinal areas to the northwest of the project site and in the Huasna Valley areas. None of these Saucelito or Phoenix member sandstone units underlay the project site. Within the finer grained units, there are thin layers where water can be found. Tmp_3, a fine-grained unit crops out beneath the project site. Beneath this unit underlying the project site, other strata occur that can be oil- and/or water bearing. Where water has been trapped or stored in these units over time, salinity of the water increases, and in many shale units, sulfur content tends to be high and objectionable for domestic use.

Geologic Limitations. The project is underlain by a basal siltstone and sandstone unit of the Upper Miocene age Phoenix Member of the Santa Margarita Formation, which is underlain by the Monterey Formation and older geologic formations. The outcropping beds at the property (Tmp_3 and Tmm) have been folded into a structural anticline plunging both northwest and southeast. The sequencing of these geologic units and the structural folding and faulting of these beds limit the extent of impact of the proposed oil field operations. Outside of the project site, the siltstone and sandstone beds dip beneath younger siliceous siltstone and claystone beds. These units have fine-grained strata that neither store nor transmit water. Because Tmp_3 siltstone and the immediately overlying unit are not permeable, impacts from project activities would be confined to any sandstone beds within the Tmp_3 and geologic units underlying the Tmp_3.

The West Huasna fault trends northwesterly and is located approximately 1,500 feet southwest of the project property. Because the fault truncates beds of the Phoenix Member it acts as a barrier to subsurface fluid glow due to low flow due to low permeability clays that form along fault surfaces and displacement of rock units, it is considered to be a boundary to potential impacts to groundwater and to water supply wells from subsurface activities related to oil exploration and production.

Twitchell Reservoir. Twitchell Reservoir is one of three water projects along the Central Pacific Coast aimed at capturing and storing floodwaters. The dam catches excess runoff from the Cuyama watershed and stores it in the dam. Huasna Creek and Huasna River flow into Twitchell Reservoir. Water is slowly discharged into the Santa Maria River, which serves as the main recharge source for the Santa Maria aquifer. The Santa Maria Valley Water Conservation District is responsible for the reservoir's day-to-day management and operations. The southerly access easement lies within the impact area of the Twitchell Reservoir

Surrounding Water Usage. Regarding area-wide water availability, individual wells

provide water for agriculture and limited individual residences within the rural areas of Huasna-Lopez. There are no water purveyors that serve the planning area as all water is provided either by small, isolated systems and individual wells. Future ground water extractions will be a function of economics (i.e., pumping costs), and surface impoundments depending on annual recharge by rainfall, stream flow, and return irrigation (SLO County 1996).

Water Usage – Dust Control. Minimal water would be used to control dust as the project includes the application of gravel and soil binders to both the Mankin's Ranch roads and the southerly access easement. Soil binders can be equally and sometimes more effective than water.

Water Usage – Domestic. During construction up to 25 employees could be on-site. Construction personnel will utilize their respective company provided water and wastewater facilities. Portable toilets will be brought on site and regularly serviced to provide for wastewater disposal. During the production phase, an office trailer will be brought on-site to serve the employee(s) who will be on-site during three (3) eight hour shifts (i.e., three employees during each 24 hour period). Bottled water will also be provided for the potable needs of the on-site employee(s). Construction related water will be provided from an off site facility (e.g., reclaimed water from City facilities).

Fire Water. According to CalFire, a minimum of 20,000 gallons of fire water will need to be stored on site at all times. The project includes installation of three (3) 10,000-gallon water storage tanks.

Surface Water. Projects involving more than one acre of disturbance are subject to preparing a Storm Water Pollution Prevention Plan (SWPPP) to minimize on-site sedimentation and erosion. When grading and site preparation work is proposed during the rainy season, the County ordinances require that temporary sedimentation and erosion control measures be installed.

In addition, several other required regulations or plans (e.g., Hazardous Materials Business Plan, Risk Management Plan, California Occupational Safety and Health Administration (Cal/OSHA) standards, Spill Prevention Countermeasure Control Plan, Hazardous Waste Management Plan, and Oil Spill Contingency Plan, etc.) will be prepared, which will directly and indirectly reduce impacts to surface water quality.

Project Production Water. The oil producing formation may include a high percentage of water. Initially, the produced fluid may have a 50% water cut or lower, which is the ratio of water produced compared to the volume of total liquids produced. Over time, the water percentage can increase to 80% or greater. Once extracted this "production" water is separated from the oil. Well production and hot water injection follow a balanced rotating cycle. Each well is produced for a period of time and is injected with hot water – "hot water flooding" to heat the reservoir to enhance oil recovery. Excess produced water that is not injected for hot water flooding will be injected back into the formation through a water disposal well. As with the extraction wells, the reinjection wells must be completely cased, per CDOGGR specifications to avoid impacting any water bearing unit that may exist above the oil formation.

3.9.3 Impacts

The following represent the potential impacts to surface water and/or groundwater.

1. Surface water quality in the ephemeral tributaries and Huasna Creek has the potential to be impacted by runoff from grading activities associated with site preparation, bridge improvements and roadway improvements.
2. Surface water quality has the potential for impacts due to the leakage or spillage of hazardous materials or wastes associated with oil field operations.
3. Properties located adjacent to the subject property are subject to potential groundwater related impacts.
4. Production water, to be reinjected back into the formation of origin, may have potential groundwater related impacts.

3.9.4 Applicant Proposed Measures

The following measures, incorporated into the project description, will mitigate potentially significant impacts to surface and/or groundwater.

- Bottled water will be used for all project potable water needs. All other water delivery points will be clearly labeled as "Non-Potable Water Source – Do Note Drink".
- To reduce water use and protect surface water quality, existing unpaved roadway surfaces will be graveled. An approved and/or certified (EPA and/or ARB) soil binder will also be applied.
- A Storm Water Pollution and Prevention Plan will be prepared and approved by the Regional Water Quality Control Board prior to the initiation of construction activities.
- A Sedimentation and Erosion Control Plan will be prepared and approved by the County of San Luis Obispo prior to construction activities.
- A Spill Contingency Plan will be prepared and approved by the County of San Luis Obispo, et al. prior to the initiation of construction activities.
- All oil field related activities (e.g., drilling, testing, production) will strictly adhere to all CDOGGR rules and regulations for the life of the project.
- Off-site wells within the area of influence (i.e., wells on properties within the boundaries of areas subject to potential groundwater related impacts) will be identified. If available, information related to their construction (i.e., depth, location of pipe perforations, location of pump, flow, etc.) will be noted and plotted on cross sections. This information will be used to determine how these zones are projected across the project site. Should this analysis reveal that the oil

well has been drilled into the same strata as the off-site water wells, a cement slurry annular seal will be installed to isolate the strata tapped by the water well.
- All oil wells will be designed to avoid all impacts to off-site water wells per CDOGGR regulations.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.10 LAND USE / PLANNING

3.10.1 Resource Documents and Reports

1. *Land Use Ordinance, Title 22 of the County Code*, County of San Luis Obispo, November 2007.

3.10.2 Setting/Impact

The proposed project is consistent with policy and/or regulatory documents relating to the environment and appropriate land use (e.g., County Land Use Ordinance, Local Coastal Plan, etc.). Referrals were sent to outside agencies to review the original project description for policy consistencies (e.g., CalFire for Fire Code, APCD for Clean Air Plan, etc.). New referrals will be submitted, as required.

The County Land Use Ordinance's chapter on Petroleum Resource Development (Ch. 22.34) was reviewed for, and found to be, consistent with the proposed project. Similarly, the County's Energy Element Policy and Guidance discussion on Fossil Fuel Production was reviewed and found to be consistent with the proposed project. It should also be noted that the project is not within or adjacent to a Habitat Conservation Plan area, and *is* consistent or compatible with the area's surrounding uses.

3.10.3 Applicant Proposed Measures

No inconsistencies with the above-mentioned documents were identified; therefore, no additional measures have been incorporated into the project description.

3.11 NOISE

3.11.1 Resource Documents and Reports

1. *Noise Analysis Excelaron Oil Project, Huasna Valley*, David Dubbink Associates, June 10, 2009.

2. *Acoustic Study for Huasna Valley Well Sites*, David Dubbink Associates, March 2008.
3. *Sound Level Assessment of Huasna Valley*, David Lord Acoustic Consulting, February 17, 2008.
4. *Sound Level Assessment II, Huasna Valley*, David Lord Acoustic Consulting, March 19, 2008.

3.11.2 Setting

The project site is located adjacent to land designated as agriculture. Due to the very rural aspects of the area, ambient noise levels are usually at or below 40 decibels (dB) during the evening and nighttime hours. During the day, due to the extensive farming and ranching activities, occasional diesel-engine noise can be heard from tractors, generators and other farming equipment, as well as larger diesel trucks hauling livestock along local roadways.

Almost all construction and operational traffic (e.g., construction vehicles, tanker trucks) generated by the project will travel south from the project site to Highway 166. There are two (2) homes near the Mankins Ranch entrance at Huasna Townsite Road that are within 100 feet of the access road.

County of San Luis Obispo Standards require that new stationary noise sources will not exceed a daytime 50 decibel threshold at the property line, nor a 45 decibel threshold at night.

3.11.3 Regulatory Framework

CEQA Noise Guidelines

The California Environmental Quality Act ("CEQA") includes a list of six (6) questions that are to be used to gauge the potential environmental impacts of projects. The questions asked include whether the project results in:

1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
2. Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

There are two (2) additional questions that do not apply to this project.

1. For a project located within an airport land use plan or, where such a plan has not been adopted, within two (2) miles of a public airport or public use airport, would

the project expose people residing or working in the project area to excessive noise levels?

2. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

County Noise Element

The Noise Element of the County General Plan provides policy framework within which potential future noise impacts are minimized. The County Noise Element addresses the prevention of noise conflicts from a variety of sources. Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure and the types of activities involved. Noise-sensitive uses that have been identified by the County include the following:

- Residential development, except temporary dwellings;
- Schools-preschool to secondary, college & university; specialized education & training;
- Health care services (hospitals);
- Nursing and personal care;
- Churches;
- Public assembly and entertainment;
- Libraries and museums;
- Hotels and motels;
- Bed and breakfast facilities;
- Outdoor sports and recreation; and
- Offices.

Stationary Noise Sources

Stationary noise control issues focus upon two (2) objectives: to prevent the introduction of new noise-producing uses in a noise sensitive area; and to prevent encroachment of noise-sensitive land uses upon existing noise-generating facilities. The County attempts to achieve these objectives by applying performance standards and by requiring that new noise-sensitive uses in proximity to existing noise sources include receiver-based mitigation measures.

County LUO Section 22.10.170 addresses stationary vibration noise in or within one-half (½) mile of an urban or village reserve line. Land use operations will not produce detrimental earth-borne vibrations perceptible at the points of determination identified in the following table.

Land Use Category	Point of Determination
Residential, Office & Professional, Recreation, Commercial	At or beyond any lot line of the lot containing the use.
Industrial	At or beyond the boundary of the Industrial category

Construction Noise

The County's Land Use Ordinance exempts construction noise between 7 am and 9 pm on weekdays and 8 am and 5 pm for weekends.

3.11.4 Impacts

The following represent the potential impacts related to noise.

1. A 2 dB increase in noise generated by traffic activity throughout the site preparation and road/bridge improvement phases is expected. This increase would be noticeable, but would not exceed the 3 dB significance level. It should be noted that this 3 dB threshold is *not* a County standard.

2. The exploration and testing phase involves heavy equipment that will be operational for an approximate eight (8) week period with drilling operations being performed on a 7-day per week, 24-hour per day schedule. The equipment is noisy; involving diesel generators, pumps, a shaker, and a powered drill. The location of Well Pad 1 is similar to that of Well Pad 2 in that it is separated from the nearest residents by the same ridge line. The height of the blocking ridge relative to the homes exceeds 100 feet in both situations. Sounds from the two separate well pads are not additive because the drilling activities will take place at different times.

   The following noise is expected from the proposed project equipment.

Equipment/Structure	dB @ 3 ft	dB @ 50 ft	dB @ 3,200 ft.
Drawworks Engine	105	81	46
Shaker	96	72	
Generator House	93	79	
Ongoing oil well pump		50	

   1) Source: Noise Study, David Dubbink Associates, March 2008

3. Well pump operations are expected to range from 28 to 30 dB (taking into account the location of residences and topographic blocking). Ordinary conversation takes place at around a 65 dB level, so sounds at such low levels would not be considered disruptive - although mechanical sounds could be bothersome to people accustom to a very quiet setting.

3.11.5 Applicant Proposed Measures

The project description includes the following measures to reduce potential noise impacts to less than significant levels.

- Noise from the movement of medium to large trucks on the road, will only be allowed between 7 am and 9 pm on weekdays and 8 am and 5 pm for weekends.

- The truck operators will be instructed to use only the approved truck haul route.
- For the duration of the project, all potential noise-generating operational equipment, including well pumps, will be kept in good working order, which will include any repairs necessary to maintain equipment to operate at manufacturer's specifications for decibel levels.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.12 POPULATION / HOUSING

3.12.1 Setting

San Luis Obispo County currently administers the Home Investment Partnerships ("HOME") Program and the Community Development Block Grant ("CDBG") in order to help reach its goal of providing more affordable housing within the area. Specifically, these programs were created to provide limited financing to affordable housing projects throughout San Luis Obispo County.

Additionally, the County has recently adopted a revised Housing Element, which outlines a program that calls for the preparation of an Inclusionary Housing Ordinance. This recently adopted ordinance, requires commercial development to pay a fee to support development of new affordable housing.

3.12.2 Impact

Due to the fact that the proposed project will result in only three (3) 8-hour on-site employee shifts per day, existing housing will not be displaced and a significant amount of new housing will not be needed. It should be noted that the tanker truck operators are contract labor, thus will not be considered new employees.

3.12.3 Applicant Proposed Measures

No significant population and housing impacts are anticipated, and therefore no mitigation measures are necessary.

3.13 PUBLIC SERVICES

3.13.1 Setting

Existing Regulations

The County-adopted Public Facilities Fee Ordinance (Title 18) provides for the collection

of a fair-share fee from new development to help mitigate for cumulative impacts on public facilities. This fee currently being collected helps fund capital improvement projects in the following areas: libraries, fire, general government, parks and recreation, and sheriff's patrol.

Fire Protection

The California Department of Forestry and Fire Protection/San Luis Obispo County Fire Department ("CalFire") is the primary responder to provide fire protection, emergency medical, and rescue services for the proposed project. A mutual aid agreement with the City of Arroyo Grande exists to assist CalFire when there is a fire outside of the City's boundaries. CalFire is also available to the City should they request assistance. A provision of this agreement states that aid would be provided as long as it does not place any undue hardship on the agency providing support to the primary responder.

Based on the County's fire severity map, the project is within the "very high" fire risk area, which identifies the area's susceptibility to wildland and brush fires. Fire hazard severity is determined by a number of factors including but not limited to: remoteness of the area, denseness of vegetation, the area's circulation network, proximity to fire fighting facilities, habitat type, and the degree of urbanization. These factors, among others, contribute to an area's overall response time. CalFire's Response Time map shows that it would take more than 20 minutes to reach the project once a call is received from the closest CalFire station (located in Nipomo, approximately 23 miles to the southwest).

CalFire conducted a recent "vehicle run" from the Nipomo station (Olde Towne) to the property site entrance. Elapsed time to travel that distance consumed 29 minutes with an additional 5 to 10 minutes needed to reach the Shipping Site. The primary route for CalFire from Nipomo would be Highway 101 to Traffic Way to Cherry/Branch Mill to Huasna Road. The southern ranch road (Porter) would also be available as a secondary access. It should be noted that the City of Arroyo Grande has indicated it would take their engines approximately 30 minutes to reach the site, while the San Luis Obispo station (located near the San Luis Obispo Airport) also responds to calls in the Huasna Valley,

Appropriate response times for fire protection services vary with the degree of urbanization. The maximum response time appropriate for urban areas is six (6) minutes; for suburban areas, seven (7) minutes; and rural areas, twelve (12) minutes. For structure fires specifically, response times exceeding 15 minutes provide little possibility of saving the structure, while response times of 60 minutes or more could denote fires approaching critical levels in steep, chaparral covered, remote areas. CalFire has mutual aid agreements with all fire protection agencies in the County, including the City of Arroyo Grande for these structure fires. The Arroyo Grande station is located approximately eight (8) miles closer than the Nipomo Station, thus would potentially have a faster response time as compared to the CalFire vehicle run (29 minutes). However, as mentioned previously, the City of Arroyo Grande has stated it would take their engines approximately 30 minutes to reach the site. In addition, an air tanker squadron at the Paso Robles Airport would be available if needed (CalFire 2003).

Police Protection and Emergency Services

The County Sheriff's Department provides police and patrol services in the unincorporated areas of the County (which is divided into three (3) areas; North, Coast, and South). The Sheriff's Department is headquartered from the operational facility at Camp San Luis Obispo. Each area has its own substation, which is supervised by a sergeant and staffed with approximately 23 deputies and 2 legal clerks.

The project would primarily be served by the South Station, which is located at 1681 Front Street in Oceano. The South Station serves the communities of Oceano, Nipomo, Huasna, rural Arroyo Grande, New Cuyama, and Lopez Lake, totaling 950 square miles. Planning areas served by the South Station include: Huasna–Lopez, South County Coastal, South County Inland, Los Padres, San Luis Obispo, and Shandon-Carrizo. Current average response times generally range from 5 to 30 minutes, with longer response times occurring within the rural outlying areas of the south and southeast portions of the County.

The California Highway Patrol ("CHP") services San Luis Obispo County's highways, with stations located in San Luis Obispo and Templeton. They are available to respond in emergency situations, but generally do not respond to residential calls.

Emergency services generally include both ambulance and hospital service. Private companies based throughout the County provide ambulance service to all areas. Response times generally meet the aforementioned standards, with the exception of the more rural portions of the County due to their expansive areas and long distances from service stations. Thus, these rural areas are highly susceptible to an inferior level of service. Hospital services are provided by Twin Cities Hospital in Templeton, Arroyo Grande Community Hospital in the City of Arroyo Grande, and by French and Sierra-Vista in the City of San Luis Obispo.

Solid Waste Collection

County LUO Section 22.10.150 determines when new land uses must include provision of identified trash collection, pickup and recycling areas, and sets design standards for such areas.

Trash collection and disposal for this project will be accomplished by individual direct haul to a landfill. The County currently has three (3) permitted public landfill facilities that accept a variety of municipal solid waste: Cold Canyon, Chicago Grade, and Paso Robles. Cold Canyon Landfill will likely be the landfill that is used, due to its close location to the project site (approximately six (6) miles south of the City of San Luis Obispo on Highway 227). The landfill (which offers recycling opportunities and waste disposal) is under the jurisdiction of, and permitted by, the California Integrated Waste Management Board.

Schools

The project is located within the Lucia Mar School District, which currently has a student capacity severity level of III (Resource Management System Annual Resource Summary Report). This severity level indicates the district's current "enrollment equals or exceeds

school capacity."

School districts within the County provide enrollment and capacity information relative to individual schools within their jurisdiction. "Capacity" is defined as design or maximum. Enrollment at 28 out of 58 (48.3 percent) of the County's schools exceeds their design capacities (SLO County 2003). Design capacity is exceeded by the addition of re-locatable temporary classrooms to a school site; however, there is a practical limit to the number of temporary facilities that can be added before core facilities become so inundated that the educational environment suffers. The maximum capacity is usually about 25 percent higher than design capacity. 18 out of 23 communities within the County have a severe school resources capacity problem (County's Department of Planning and Building).

Countywide, several districts have been experiencing significant enrollment declines throughout the last several years, particularly in elementary schools. The decline is generally attributed to high housing costs in these parts of the county, which deter families with young children from locating there (SLO County 2003).

Revenue for facilities construction comes from both State and local sources, including developer fees. A statutory fee that also contributes to funding facilities is the Stirling fee, which is based on the amount of building construction proposed and is adjusted annually. The State Building Program is the primary source of funding for school facility projects. Most County school districts participate in school construction programs, whereby new development contributes a portion of the cost of new facilities, while the remainder is supplied by State and local resident taxes. Local funding alternatives include community approval of a general obligation bond for school construction. The General Obligation ("GEO") Bond election process requires two-thirds voter approval. From 1986 to June 2000, only 55% of the school districts that held GEO Bond elections successfully earned the two-thirds voter approval for school facility funding. However, Proposition 39, which allows for approval of school construction bonds at a 55% threshold, was approved in the year 2000.

Due to gas price increases, many school districts are looking at ways to reduce costs to help offset these unanticipated costs. While not currently being considered by the District, reduction in school bus services is one option that could help offset these costs.

Currently and in the foreseeable future, approximate school bus route times are as follows:

Branch Elementary – 7:30 to 8:30, 12:30 to 1:30 and 3:30 to 4:30

Paulding – 6:45 to 7:15, 2:30 to 4:15

AGHS – 6:45 to 7:15, 3:45 to 4:15

No summer school buses on Huasna Road

Current school year started August 25, 2008

3.13.2 Impact

The following represent the potential impacts related to public services.

1. CalFire, as the primary responder, has identified the potentially flammable vegetation near the well pads, shipping site, and access roads as fire safety concerns.
2. The project's rural location in a very high fire severity area, with a fire station response time greater than 20 minutes, is a potential impact to fire safety.
3. Containers with flammable or explosive potential (e.g., crude oil, propane tanks, etc.) located on site could increase the likelihood of fires or explosions.
4. It is unknown if employees coming from out of the area will live within the Lucia Mar School District, or have children. However, based on averages and assumptions that all employees are from within the area and have school age children living within the District, up to four (4) additional students could be expected. This will not have a significant impact on the existing school resources.
5. There will be three (3) school buses on Huasna Road in the morning between 6:45 and 8:30 am, one (1) after-school bus between 12:30 and 1:30, and two (2) between 3:30 and 4:30. The project does not require large vehicles to travel using Huasna Road and avoids potential conflict with these school buses.

3.13.3 Applicant Proposed Measures

The project description includes the following measures to reduce potential public service impacts to less than significant levels.

- To minimize potential fire safety impacts, recommendations made by the California Department of Forestry/CalFire (see 7/27/07 letter) and the Fire Safety Standards (LUO Sec. 22.05.086) will be abided by. This includes: minimum road widths will be 18 feet wide, all-weather surface and support 20 tons; road grades exceeding 12% will be non-skid surface; vegetation clearance/modification will be 100 feet around oil wells and oil production facilities and 10 feet along access roadway. All efforts will be made to minimize impacts to all oak trees within 100 feet from the well pad and shipping area and within 10 feet from the access road and any new above-ground piping. All-weather turnouts will be installed approximately every ½ mile over the approximate 6 (six) mile length of the southern ranch road access. Construction plans will include notes or show all applicable Fire Safety Plan elements, as approved by CalFire. All required elements will be implemented, as approved by CalFire.
- A "Helispot" (i.e., a location near a fire where it is safe for helicopters to land and take off) will be located on site. At this designated location, a helispot manager will coordinate landings and take-offs, as well as the manifesting, loading, and unloading of equipment and personnel. If necessary, Helispots could also be temporarily located on ridges, meadows, and parking lots (i.e., any clearing suitable and meeting rotor

clearance and hazard (wires, trees, etc.) avoidance requirements).

- As a part of the Fire Safety Plan, at a minimum, the following will be included on the construction plans:
    - A minimum of two (2) fire extinguishers will be maintained at each tank battery and at least one (1) at each well location where drilling, servicing or repair work is being conducted (located within 30 feet). Each such extinguisher will have a minimum classification of 40 BC as set forth in N.F.P.A. No. 10, "Standard for the Installation for Portable Fire Extinguishers," and any amendments or successors thereto.
    - No smoking will be permitted on the project site.
    - A fire water storage tank will be installed per CalFire requirements that will provide for no less than 20,000 gallons (larger if required by CalFire). The tank location will result in a gravity fed system for the hydrants. If adequate line pressure cannot be achieved through gravity alone, at least one additional back-up generator of adequate size and design will be kept on-site in good working order to provide emergency back-up power. If the water tank(s) will be located at or above the well pad, it will be located and designed to not be visible from any public road, and not require the removal of any oak trees. At least one hydrant will be installed within 50-150 feet of each oil well and within 8 feet of the access road.
    - An automatic fire suppression system will be installed for the oil production facility, per CalFire recommendations.
    - The facility will be clearly addressed at Huasna Townsite Road (with minimum 6-inch numbers) and reflective directional signage at all internal road forks.
    - All combustible or flammable substances stored on site will be in approved metal storage lockers/containers.
    - Material Safety Data Sheets will be stored on site and easily accessible to CalFire.
    - If a gate is installed near the Huasna Townsite Road entrance, it will be no closer than 30 feet from the edge of pavement. Any gates or locked facilities (including the southern access ranch road) will have a KNOX box installed allowing access to the fire department.
    - Any bridges on the access road must be at least 10 feet wide, support 20 tons, and be properly signed with load weight limits.
    - Provide a permit application to CalFire and County Building Division for the installation of the proposed propane storage tanks, oil storage tanks and delivery pipelines. This application will include all required ICC Fire Code requirements for this equipment.
    - A fire/emergency plan will be implemented, and each employee will be

instructed upon hiring and reminded on a yearly basis of the policies and procedures to keep all of the required elements in good working order.

- A portable fire extinguisher will be kept in close proximity of any welding work, including any repairs to or installation of the above-ground lines.
- All on-site long-term or permanent metal structures/equipment will be properly grounded for lightning strikes.
- A fire/life safety inspection will be required**.**
- The southern ranch access road will display the following:
  a) Huasna River Bridge – a new top deck will be installed to insure a 25-ton vehicle capacity.
  b) All-weather turnouts, sized for dual tankers, at approximate ½ mile increments, or as approved by CalFire.

- All contractors (e.g., for grading, construction, etc.) will be provided with the list of companies that offer recycling services or drop box service. 50% of waste generated by the project's construction activity will be recycled.

  Waste includes anything discarded from the site, such as wood scraps, cardboard, flashing, paint or other finishing products, tools, drywall, concrete, asphalt, plastic bags, remnants of insulation, etc. The "Recycling Required at Construction Sites" pamphlet will be provided to all contractors prior to commencement of construction work.

- Construction plans will show the installation of garbage and recycling bins to be used by employees (permanent and contract) for all non-toxic refuse. To minimize vector problems, these bins will be taken to Cold Canyon Landfill at least twice a month, or more often when needed. These bins will kept in good working order during the life of the project.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.14 RECREATION

3.14.1 Setting

The proposed project is not located in an area that will affect any recognized trail, park, or other recreational resource. The County Trails Plan does not show any potential trails are anticipated to traverse the proposed project site. Additionally, the 2005 County Bike Plan does not recognize Huasna or Huasna Townsite Roads as existing or future roads with, or for, bike improvements, however, due to the road's scenic qualities, recreational cyclists can be found.

3.14.2 Impact

The proposed project will only create three (3) additional full time employees; therefore, the project will not cause significant need for additional park space, nor will it significantly impact recreational resources.

3.14.3 Applicant Proposed Measures

No significant impacts to recreational facilities are anticipated, and no mitigation measures are necessary.

3.15 TRANSPORTATION / TRAFFIC

3.15.1 Resource Documents and Reports

1. *Traffic Analysis for Huasna Road Proposed Oil Exploration and Production Facility with Southerly Private Easement Access, San Luis Obispo County*; Orosz Engineering Group, Inc. May 15, 2009.
2. *Structural Evaluation: Huasna Bridge – Huasna Townsite Road San Luis Obispo County*, Lampman & Smith; June 23, 2008.

3.15.2 Setting

The proposed project is located approximately 1.4 miles from the intersection of Huasna Road and Huasna Townsite Road through a private driveway westerly of Huasna Townsite Road. The required vehicle haul route, for all construction traffic and operational tanker trucks, will exit the project site southeasterly on Huasna Townsite Road to a private access easement, to Alamo Creek Road, to Highway 166, and finally south onto Highway 101. For the purposes of evaluation, it was assumed that the ultimate destination for all tanker truck traffic would be outside San Luis Obispo County. Only regular service vehicles, that are already serving the area and employee vehicles are proposed to use Huasna Road.

Huasna Townsite Road is located approximately 10 miles from Lopez Drive. This road segment is fairly straight with two (2) paved travel lanes, one in each direction, with little or no shoulders. The basic road section for Alamo Creek Road is two (2) travel lanes with graded dirt shoulders. Roadways of this type can carry 7,000-10,000 average daily trips ("ADT") at capacity. The posted speed limit is 35 MPH. The southern end of Alamo Creek Road intersects Highway 166. Between Huasna Townsite Road and Alamo Creek Road, there is a gravel-dirt access road that connects the two through Porter Ranch. The project has an easement for the roadway and will stabilize the existing access road to reduce dust and to improve all weather access.

The County has established the acceptable Level of Service ("LOS") on roads for this rural region as "C" or better. The existing County roads in the area (Huasna Townsite

Road and Alamo Creek Road) and Highways 166 and 101 are all operating at acceptable levels. Currently, the traffic volume on Huasna Townsite Road has a capacity of 3,000 ADT, yet is estimated to have approximately 100-150 ADT based upon the number of ranches and home sites located along the road segment. Similarly, Huasna Townsite Road operates at LOS A, a very good level of service with no measurable delays.

The traffic volumes along Alamo Creek Road are slightly higher with 180 ADT based upon actual counts taken on October 15, 2008. At this volume of traffic, Alamo Creek Road also operates at LOS A. The section of Highway 166 near Alamo Creek Road is constructed with two (2) 12' travel lanes and 2-3 foot wide shoulders. The Alamo Creek Road intersection has a STOP control on the side street only. The most recently published data by CalTrans indicates that this segment of the highway carries 2,450 vehicles per day with 320 vehicles during the peak hour. The resultant level of service is LOS A. This section of Highway 166 carries a high (26.5 percent) amount of truck traffic. See Table 2.

Table 2: Existing Road Conditions

	Level of Service	Capacity (Average Daily Trips)	Average Daily Trips
Huasna Townsite Road	A	3,000	100-150
Alamo Creek Road	A	7,000 – 10,000	180
Alamo Creek and Highway 166 intersection	A	--	2,450
Highways 166 and 101	Acceptable	--	--

In addition to Level of Service, traffic safety is an important facet that the proposed project has considered. The Alamo Creek Road / Highway 166 intersection currently experiences a "higher than state-wide" average for traffic accidents. A crash analysis was conducted for this intersection, which found a total of five (5) crashes have occurred within the vicinity of the intersection between January 1, 2004 and December 31, 2007. All of these crashes occurred during daylight hours and involved motorcycle/passenger cars/pick-up truck type vehicles; none of these crashes involved impaired drivers or large trucks.

Additionally, the Huasna Creek Bridge, located at the south end of Huasna Townsite Road, remains in fair condition and has not significantly changed from CalTrans Inspection Report dated July 9, 2007. However, the planks do show additional signs of wear and tear and several fasteners are loose / withdrawing from the stringers, making the planks and stringers inadequate to support HL-93 loading. The project includes replacement of the bridge deck and additional stringers to support the additional loads.

Overall, it should be noted that the project is within the South County planning area, but outside of the South County Circulation Fee area and therefore not subject to these fees. The proposed route would not impact any of the roads that are targeted for improvement

under this fee program.

3.15.3 Impact

The following represent the potential impacts related to transportation.

1. A range of 13-32 average daily trips ("ADT") (one-way) will be generated, depending upon the project phase. An expected 20-32 ADT would be added to the existing traffic volumes along Huasna Townsite Road and Alamo Creek Road during the first month of operation. In the subsequent nine (9) months, the project would be expected to add between 13-21 ADT, depending upon the work being performed. During the exploration and production phases, the project would generate up to 20 ADT with a short term increase to about 40 ADT during the month of exploration.
2. If all twelve (12) wells were developed under the proposed Field Development scenario, the project would be expected to have a maximum on-going traffic volume count of about 20 ADT (a traffic volume that is roughly equivalent to two (2) single family ranch estate residences). Traffic volumes are not expected to significantly impact the operation of either Huasna Townsite Road or Alamo Creek Road.
3. Neither the increase of temporary construction traffic nor the long-term operational traffic is expected to significantly impact current Level of Service, presently at an acceptable "A" level.
4. Heavy truck travel will accelerate the need to repair Huasna Townsite and Alamo Creek roads over time.
5. The combination of slow-moving project trucks, high-speed travel with limited sight distance, and the accident history within the Alamo Creek Road and Highway 166 intersection is expected to produce minor impacts to safety.
6. The Huasna River Bridge will need to be strengthened to accommodate a 25-ton capacity in order to withstand the weight of the proposed tanker trucks.
7. Cumulative impacts to the Santa Maria Bridge (which is nearing the end of its expected life span) on Highway 101 are expected.

3.15.4 Applicant Proposed Measures

The project description includes the following measures to reduce potential transportation impacts to less than significant levels.

- All construction traffic and operational tanker truck traffic will adhere to the approved truck haul route, which will direct truck traffic from the project site as follows: Huasna Townsite Road south to Porter Ranch access road to Alamo Creek Road to Highway 166, then west to Highway 101, and south on Highway 101. All tanker truck drivers will be notified of this required haul route.

- Prior to the commencement of the production phase, the following will be implemented on the Alamo Creek Road and Highway 166 intersection:
    - Design and construct left-turn channelization for the east bound Highway 166 turning movement onto Alamo Creek Road;
    - Widening of westbound State Route 166 and Alamo Creek Road in accordance with California Highway Design manual Figure 405.7. A separate encroachment permit may be obtained from County Public Works if the work encroaches within the county right-of-way on Alamo Creek Road; and,
    - Obtain a CalTrans encroachment permit to conduct the above-listed items.
- An agreement with the County will be made, in a form acceptable to County Counsel, to deposit into the County Road Fund not to exceed an initial amount of $20.81 per haul oil truck trip (trip) over the following County-maintained roads: Huasna Townsite Road, Alamo Creek Road. The agreement will provide for reports of number of trips, and corresponding payment, to be made quarterly. The cost per trip will be subject to annual adjustment based on the CalTrans Construction Cost Index. However, in no case will a negative cost index be allowed to reduce the previous year's fee. The beginning index date will be the date that the project receives approval by the hearing body.
- Prior to the issuance of a construction permit, the following will occur:
    - In accordance with County Public Improvement Standards, an encroachment permit from the Department of Public Works will be obtained for all proposed improvements within the county public right-of-way; and
    - Verification of the southern ranch road easement agreement will be submitted to the county to determine that no conflicting provisions exist when compared to county conditions of approval. Any renewed easement will be submitted to the county to verify that no substantive changes have been made from the original approval.
- A driveway approach on Huasna Townsite Road (Road No. 1071) at the project entry will be constructed in accordance with County Public Improvement Standards. All driveway approaches constructed on county roads will obtain an encroachment permit.
- During the life of the permit, a separate Transportation Permit from the Public Works Department for each vehicle in excess of legal limits utilizing county maintained roads will be secured.
- In the event that any portion of the approved truck haul route on the southern access ranch road becomes "impassable" due to the Twitchell Reservoir receiving runoff to reach a water surface elevation of 599 feet or above, the following will occur:
    - Any stored oil will be transported off site prior to road closure;
    - All tank contents will be drained and the facility will cease operation;
    - All employees and contractors will be placed on notice of the above-

mentioned conditions.

If and when Twitchell's water surface level reaches above the 599-foot elevation, any project related traffic will cease along the Porter Ranch access road and operations will temporarily shut in. Shutting in the facility would eliminate the necessity for regular project related traffic during that period of time. Operation of the facility and access to the site would remain closed until the following has been completed:

- The water surface elevation of the Twitchell Reservoir recedes below elevation 599';
- A thorough inspection of the Porter Ranch access roads has been made and any deficiencies identified; and
- The proper repairs have been made to any deficiencies.

- To address cumulative impacts to the Santa Maria Bridge on Highway 101, a contribution of $4,500 to CalTrans will be made towards its reconstruction.
- To accommodate HL-93 loading, installation of a new top deck and additional stringers for the Huasna River Bridge (at the south end of Huasna Townsite Road) will be completed.

Monitor

A County approved monitor will be retained during construction to insure that construction-related and post-construction measures have been implemented.

3.16 UTILITIES / SERVICE SYSTEMS

3.16.1 Setting

Electrical power will be supplied to the site by means of a propane-fueled generator. All pumps, motors, and compressors will run off of the electricity provided by this generator or by propane fueled engines. PG&E serviced power lines are located approximately ¼ mile to the southwest end of the project site, but do not provide the 3-phase power needed for this project.

Two (2) propane-fueled heaters will be used to heat fluids in the pipeline and tanks; any natural gas produced will fuel the heaters. A 5,000-gallon propane tank will also be built on site and serviced regularly. It should additionally be noted that the proposed project does not require sewage services and does not have natural gas service within close proximity. The projects use of energy will be offset by the enhanced recovery of crude oil.

3.16.2 Impact

The proposed project will not create a significant demand on existing utilities or service

systems.

3.16.3 Applicant Proposed Measures

No significant impacts to utilities or service systems are anticipated, and no mitigation measures are necessary.